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BUREAU OF LAND MANAGEMENT
SOFTWARE DEVELOPMENT STANDARDS

January 9, 1995

BOOK 1

Prepared For:

The Bureau of Land Management, Denver/Washington Office
Denver Service Center, Denver Colorado 80225

Date: _____

Date: _____

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The Individual DIDs

for

Bureau Software Development Standards

[77-SDS-000102]

BLM 80008B	System/Segment Specifications (SSS)
BLM 80012B	Software Design Document (SDD)
BLM 80013B	Version Description Document (VDD)
BLM 80014B	Software Test Plan (STP)
BLM 80015B	Software Test Description (STD)
BLM 80017B	Software Test Report (STR)
BLM 80018B	Computer System Operator Manual (CSOM)
BLM 80019B	Software User Manual (SUM)
BLM 80022B	Firmware Support Manual (FSM)
BLM 80025B	Software Requirements Specifications (SRS)
BLM 80026B	Interface Requirements Specifications (IRS)
BLM 80027B	Interface Design Document (IDD)
BLM 80029B	Software Product Specification (SPS)
BLM 80030B	Software Development Plan (SDP)
BLM 80534B	System/Segment Design Document (SSDD)
BLM 80031B	Software Installation Plan (SIP)
BLM 80032B	Database Design Document (DBDD)
BLM 80033B	Software Support Plan (SSP)
BLM 80034B	Computer Center Software Operator Manual (CCSOM)
BLM 80035B	Operatoral Concept Document (OCD)
BLM 80036B	Software Input/Output Manual (SIOM)

Consolidated DID's

BLM C-80012B	Consolidated Software Design Document (C-SDD)
BLM C-80013B	Consolidated Software Support Document (C-SSD)
BLM C-80015B	Consolidated Software Test Document (C-STD)
BLM C-80025B	Consolidated Software Requirements Document (C-SRD)
BLM C-80030B	Consolidated Software Plan (C-SP)

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DOCUMENT: BLM 80025B

SOFTWARE REQUIREMENTS SPECIFICATION (SRS)

ALL

DOCUMENT: BLM 80025B

SOFTWARE REQUIREMENTS SPECIFICATION (SRS)

PURPOSE: The Software Requirements Specification (SRS) specifies the engineering and qualification requirements for a Computer Software Configuration Item (CSCI).

The SRS is used as the basis for developing and testing a CSCI. Upon Government approval, it becomes part of the Allocated Baseline.

CONTENTS: This Data Item Description (DID) contains the format and content preparation instructions for completion of the Software Requirements Specification as required by 77-SDS-000102.

Paragraphs that have been tailored out of the DID shall result in the corresponding paragraph number and title in the document, followed by "This paragraph has been tailored out."

Document Structure:

1. Scope
 - 1.1 Identification
 - 1.2 System overview
 - 1.3 Document overview
2. Applicable documents
 - 2.1 Government documents
 - 2.2 Non-Government documents
3. Requirements.
 - 3.1 CSCI-external interface requirements
 - 3.1.x (Name/identifier of interfacing item)
 - 3.2 CSCI capability requirements
 - 3.2.x (Capability name and project-unique identifier)
 - 3.3 CSCI internal interfaces
 - 3.4 CSCI internal data element requirements
 - 3.5 Adaptation requirements
 - 3.5.1 Installation-dependent data
 - 3.5.2 Operational parameters
 - 3.6 Sizing and timing requirements
 - 3.7 Safety requirements
 - 3.8 Security and privacy requirements
 - 3.9 Design constraints
 - 3.10 Software quality factors
 - 3.11 Human performance/human engineering requirements
 - 3.12 Requirements traceability
4. Qualification requirements
 - 4.1 Qualification methods

255

4.2 Special qualification requirements

5. Preparation for delivery

6. Notes

7. Appendizes

1. Scope. This section shall be divided into the following paragraphs.

- 1.1 Identification. This paragraph shall contain a full identification of the system and the CSCI to which this document applies, including, as applicable, identification number(s), title(s), abbreviation(s), version number(s), and release number(s).

- 1.2 System overview. This paragraph shall briefly state the purpose of the system and the software to which this document applies. It shall describe the general nature of the system and software; summarize the history of system development, operation, and maintenance; identify the project sponsor, user, developer, and support agencies; identify current and planned operating sites; and list other relevant documents.

- 1.3 Document overview. This paragraph shall summarize the purpose and contents of this document.

2. Applicable documents. This section shall be divided into the following paragraphs.

- 2.1 Government documents. This paragraph shall contain a list of all Government publications referenced within this document including the Identification Number, Document Title, date of publication, and author (if known).

- 2.2 Non-Government documents. This paragraph shall contain a list of all Non-Government publications referenced within this document including the Identification Number, Document Title, date of publication, and author (if known).

- 3.1 CSCI-external interface requirements. This paragraph shall be divided into subparagraphs to identify each required CSCI-external interface and specify the CSCI requirements associated with each interface. A diagram may be used to provide an overview of the interfaces.

- 3.1.x (Name/identifier of interfacing item). This paragraph shall

state the name and project-unique identifier of an item with which the CSCI is required to interface (for example, a CSCI, system, HWCI, database, network or communications element, element of the software engineering or test environment, user, or operator),

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shall state the purpose of the interface, and shall itemize the interface requirements imposed on the CSCI to achieve the interface. This paragraph may reference an Interface Requirements Specification or other document that specifies these requirements. The requirements shall include, as applicable:

- a. Requirements pertaining to data elements the CSCI must send (output) or receive (accept as input), including, as applicable:
 - * identifier;
 - * description;
 - * sources;
 - * recipients;
 - * units of measure;
 - * limit/range of values;
 - * accuracy;
 - * precision/resolution;
 - * timing characteristics;
 - * legality checks that must be passed;
 - * data type;
 - * representation/format; and
 - * sequence or other dependencies
- b. Identification of each message or other data assembly that must be sent (output) or received (accepted as input) and required assignment of data elements to each
- c. Required priorities among interfaces, data elements, messages, or assemblies
- d. Specification of each interface/communications protocol that must be used, including as applicable:
 - * fragmentation/reassembly of messages;
 - * message formatting;
 - * legality checks, error control and recovery procedures;
 - * synchronization;
 - * flow control;
 - * data transfer rate;
 - * routing, addressing, and naming conventions;
 - * transmission services;
 - * status and other reporting features;
 - * security; and
 - * privacy features

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divided into subparagraphs to itemize the requirements associated with each capability of the CSCI. A "capability" is defined as a group of related requirements. The word "capability" may be replaced with "function," "subject," "object," or other term useful for presenting the requirements. If the system of which the CSCI is a part can exist in various system states and modes as documented in the system specification, this paragraph shall correlate each CSCI requirement or group of requirements to those states and modes. A table may be used to depict this correlation.

3.2.x (Capability name and project-unique identifier). This paragraph shall identify a CSCI capability by name and project-unique identifier and shall state its purpose. If the capability can be more clearly specified by dividing it into constituent capabilities, each constituent capability shall be assigned a project-unique identifier derived from the identifier of the parent capability and shall be specified in subparagraphs. The paragraph for each capability or subcapability shall itemize the requirements associated with the (sub)capability. The requirements shall include applicable parameters, such as response times, sequencing, accuracy, capacities (how much/how many), priorities, continuous operation requirements, and allowable deviations based on operating conditions, and shall express these parameters in measurable terms. The requirements shall also include required behavior under unexpected or "out of bounds" conditions and any provisions to be incorporated into the CSCI to provide continuity of operations in the event of emergencies. Each requirement shall be stated in such a way that an objective test can be defined for it.

3.3 CSCI internal interfaces. This paragraph shall identify any requirements imposed on the interfaces between the capabilities identified above. If all internal interfaces are left to the design, this fact shall be so stated. Each internal interface on which requirements are imposed shall be identified by name and project-unique identifier and the interface requirements shall be itemized. Internal interface diagrams depicting data flow, control flow, and other relevant information may be used to aid in this description.

3.4 CSCI internal data element requirements. This paragraph shall specify any requirements imposed on the data elements internal to the CSCI. If all decisions about internal data elements are left to the design, this fact shall be so stated. If they have been

covered elsewhere in this specification, they need not be repeated here. If requirements are imposed on data elements internal to the CSCI, they shall include, as applicable:

- a. A project-unique identifier for the data element
- b. A brief description of the data element
- c. Units of measure required for the data element, such as
seconds, meters, dollars
- d. Limit/range of values required for the data element (for
constants, the actual value)
- e. Accuracy required for the data element
- f. Precision or resolution required for the data element in
terms of significant digits
- g. Required format, such as field definitions

3.5 Adaptation requirements. This paragraph shall be divided into the following subparagraphs to specify any adaptation requirements for the CSCI.

3.5.1 Installation-dependent data. This paragraph shall describe any site-unique data required by each installation. Examples of such data are: site latitude and longitude, radar ranges and areas of coverage, and prescribed safety limits. In addition, this paragraph shall identify the CSCI capabilities in which these data are used.

3.5.2 Operational parameters. This paragraph shall describe any parameters required by the CSCI that may vary within a specified range according to operational needs. Examples of such data are: allowable trajectory deviations, navigation set model numbers, airplane performance characteristics, interaction/isolation of sorties, missile performance characteristics. This paragraph shall identify the CSCI capabilities in which these data are used.

3.6 Sizing and timing requirements. This paragraph shall specify:

- a. Sizing requirements on the CSCI, including, as applicable:

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- 1) Amount/type/location of internal and auxiliary memory allocated to the CSCI
- 2) Any variations between normal operation and contingency operations
- 3) Any other constraints imposed by the planned memory available to the CSCI

b. Timing requirements on the CSCI, including, as applicable:

- 1) The amount of processing time allocated to the CSCI
- 2) Required throughput time
- 3) Required response time to queries and other requests
- 4) Sequential/concurrency relationships of CSCIs
- 5) Sequential/concurrency relationships of CSCI capabilities
- 6) Priorities imposed by type of inputs and modes of operation
- 7) Timing requirements for range of loads under varying operating conditions
- 8) Required input/output transfer times

3.7 Safety requirements. (If applicable). This paragraph shall specify any safety requirements applicable to the CSCI, concerning potential hazards to personnel, property, or equipment.

3.8 Security and privacy requirements. This paragraph shall specify any CSCI requirements concerned with security and privacy. These requirements shall include, as applicable:

- a. The type and degree of security or privacy of data that are permitted or required to be used in or processed by the CSCI, including whether the data are always sensitive, become sensitive upon the occurrence of

specific events, or change their degree of sensitivity upon the occurrence of specific events

b. The type and degree of security or privacy of the algorithms

that are permitted or required to be used in the CSCI

c. The security and privacy environment that can be assumed to

exist when the CSCI will be in operation

3.9 Design constraints. This paragraph shall specify any other requirements that constrain the CSCI design, such as the use of a particular processing configuration. If there are no constraints imposed on the CSCI design, this fact shall be so stated.

3.10 Software quality factors. This paragraph shall be divided into subparagraphs as needed to specify any software quality factors identified in the contract or derived from a higher level specification and the method to be used to determine whether each quality factor has been met. These factors shall include:

- * reliability (the ability to perform with correct, consistent results),

- * maintainability (the ability to be easily corrected),

- * availability (the ability to be accessed when needed),

- * flexibility (the ability to be easily adapted to changing requirements),

- * portability (the ability to be easily modified for a new hardware environment),

- * reusability (the ability to be used in multiple applications),

- * testability (the ability to be easily and thoroughly tested),
and

- * usability (the ability to be easily learned and used)

3.11 Human performance/human engineering requirements. This

paragraph shall specify any human factors engineering requirements imposed on the CSCI. These requirements shall include, as applicable, considerations for:

- a. Human information processing capabilities and limitations
- b. Foreseeable human errors under both normal and extreme conditions
- c. Implications for the total system environment (include training, support, and operational environment)

3.12 Requirements traceability. This paragraph shall contain:

- a. A mapping of the engineering requirements in this specification to the system requirements allocated to this CSCI
- b. A mapping of the system requirements allocated to this CSCI to the engineering requirements in this specification

4. Qualification requirements. This section shall be divided into the following paragraphs to specify the qualification requirements for the CSCI.

4.1 Qualification methods. This paragraph shall define a set of qualification methods and specify the qualification method(s) to be used to ensure that each requirement in sections 3 and 5 has been met. Qualification methods may include:

- a. Demonstration: The operation of the CSCI (or some part of the CSCI) that relies on observable functional operation not requiring the use of instrumentation or special test equipment.
- b. Test. The operation of the CSCI (or a part of the CSCI) using instrumentation or other special test equipment to collect data for later analysis.
- c. Analysis: The processing of accumulated data obtained from other qualification methods. Examples are reduction, interpretation, or extrapolation of test results.
- d. Inspection: The visual examination of CSCI code, document-ation, etc.

paragraph shall apply to any future facility construction
requirements imposed on the GDI. These requirements
shall include, as appropriate, consideration for:

- a. When installing the processing capabilities and
equipment, the contractor shall ensure that the
facility and equipment are installed in a manner
consistent with the local space requirements.
- b. The contractor shall ensure that the facility and equipment are installed in a manner consistent with the local space requirements.

1.14. Facility Requirements. The contractor shall ensure that the facility and equipment are installed in a manner consistent with the local space requirements.

a. A copy of the engineering requirements for the
facility shall be provided to the GDI for review and
approval.

b. A copy of the engineering requirements for the
facility shall be provided to the GDI for review and
approval.

c. The contractor shall ensure that the facility and equipment are installed in a manner consistent with the local space requirements.

d. The contractor shall ensure that the facility and equipment are installed in a manner consistent with the local space requirements.

e. The contractor shall ensure that the facility and equipment are installed in a manner consistent with the local space requirements.

f. The contractor shall ensure that the facility and equipment are installed in a manner consistent with the local space requirements.

g. The contractor shall ensure that the facility and equipment are installed in a manner consistent with the local space requirements.

h. The contractor shall ensure that the facility and equipment are installed in a manner consistent with the local space requirements.

4.2 Special qualification requirements. This paragraph shall be divided into subparagraphs as needed to specify any special requirements associated with qualification of the CSCI. This paragraph shall identify and describe, if applicable, special tools, techniques (e.g., test formulas, algorithms), procedures, facilities, and acceptance limits. For each special test the following information shall be specified:

- a. A project-unique identifier for the test
- b. The paragraph number(s) of the requirements to which the test applies
- c. A description of the test, such as peak-load stress test for 24 hour duration
- d. The level of the test (software unit, CSCI, segment, or system level)

5. Preparation for delivery. This section shall specify any requirements on the type and characteristics of the delivery media for the CSCI (e.g., 8 track magnetic tape 1600 BPI, 150 megabyte disk); the labeling, packaging, handling, and classification marking requirements for the media; and any unique delivery requirements.

6. Notes. This section shall contain any general information that aids in understanding this specification (e.g., background information, glossary, formula derivations, rationale). This section shall include an alphabetical listing of all acronyms, abbreviations, and their meanings as used in this document and a list of any terms and definitions needed to understand this document.

A. Appendixes. Appendixes may be used to provide information published separately for convenience in document maintenance (e.g., charts, classified data). As applicable, each appendix shall be referenced in the main body of the document where the data would normally have been provided.

General guidelines for the preparation of the report shall be as follows: The report shall be prepared in a clear and concise manner, using a standard format. The report shall be prepared in a clear and concise manner, using a standard format. The report shall be prepared in a clear and concise manner, using a standard format.

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INTERFACE REQUIREMENTS SPECIFICATION

(IRS)

(IRS)

INCIDENT: 11/11/11

INTERFACE REQUIREMENTS SPECIFICATION

(11/11/11)

DOCUMENT: BLM 80026B

INTERFACE REQUIREMENTS SPECIFICATION (IRS)

PURPOSE: The Interface Requirements Specification (IRS) specifies the requirements for one or more interfaces between one or more Computer Software Configuration Items (CSCIs) and other configuration items or critical items.

The IRS can be used:

- a) To document the interface characteristics of existing CSCIs (saying, in essence, "To send data to, or receive data from, these CSCIs, you must follow these rules") or,
- b) To specify requirements for the interface characteristics of new or being-modified CSCIs (saying, in essence, "The CSCIs are required to send/receive data in accordance with the following rules").

The IRS supplements the Software Requirements Specifications as the basis for developing and testing CSCIs. Upon Government approval, the IRS becomes the joint configuration control device for the interface(s) and becomes part of the Allocated Baseline.

CONTENT: This Data Item Description (DID) contains the format and content preparation instructions.

This DID is an alternative to Consolidated Software Requirements Document and Consolidated Software Development Record). Only one of these three DIDs should be applied to a given set of data.

Paragraphs that have been tailored out of the DID shall result in the corresponding paragraph number and title in the document, followed by "This paragraph has been tailored out."

DOCUMENT STRUCTURE:

- 1. Scope.
 - 1.1 Identification.
 - 1.2 System overview.
 - 1.3 Document overview.
- 2. Applicable documents.
 - 2.1 Government documents.
 - 2.2 Non-Government documents.
- 3. Interface requirements.

RESEARCH PROGRESS REPORT (1977)

INTRODUCTION

The purpose of this report is to provide a summary of the progress made during the year 1977 in the research project on the development of a new type of computer system. The project is being carried out by the Department of Computer Science, University of Toronto.

The report is organized as follows:

1. A description of the research project and its objectives.

2. A description of the progress made during the year 1977.

3. A description of the results of the research project.

CONCLUSION

The research project has been completed and the results are being prepared for publication.

This report is being submitted to the Department of Computer Science, University of Toronto.

The research project was supported by the Department of Computer Science, University of Toronto.

REFERENCES

1. Department of Computer Science, University of Toronto.
2. Department of Computer Science, University of Toronto.
3. Department of Computer Science, University of Toronto.
4. Department of Computer Science, University of Toronto.
5. Department of Computer Science, University of Toronto.
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9. Department of Computer Science, University of Toronto.
10. Department of Computer Science, University of Toronto.

- 3.1 Interface identification and diagrams.
- 3.x (Interface name and project-unique identifier).
 - 3.x.1 Data element requirements.
 - 3.x.2 Messages or other data assemblies.
 - 3.x.3 Interface priorities.
 - 3.x.4 Interface/communication protocols.
 - 3.x.4.y (Protocol name).
- 4. Qualification requirements.
 - 4.1 Qualification methods.
 - 4.2 Special qualification requirements.
- 5. Preparation for delivery.
- 6. Notes.
- 7. Appendixes.

1.1	Introduction: the situation and diagnosis	
1.2	Research aims and project objectives	
	Identification	
1.3.1	Identify relevant stakeholders	
1.3.2	Identify or other data requirements	
1.3.3	Identify potential	
1.3.4	Identify communication products	
1.3.5	Identify technical needs	
2	Qualitative requirements	
2.1	Qualitative requirements	
2.2	Qualitative requirements	
3	Preparation for delivery	
4	Notes	
5	Appendices	

1. Scope. This section shall be divided into the following paragraphs.
 - 1.1 Identification. This paragraph shall contain a full identification of the system(s), CSCI(s), and interfaces to which this document applies, including, as applicable, identification number(s), title(s), abbreviation(s), version number(s), and release number(s).
 - 1.2 System overview. This paragraph shall briefly state the purpose of the system(s), software, and interfaces to which this document applies. It shall describe the general nature of the system and software; summarize the history of system development, operation, and maintenance; identify the project sponsor, user, developer, and support agencies; identify current and planned operating sites; and list other relevant documents.
 - 1.3 Document overview. This paragraph shall summarize the purpose and contents of this document.
2. Applicable documents. This section shall be divided into the following paragraphs.
 - 2.1 Government documents. This paragraph shall begin with one of the following, as applicable:
 - (1) "The following documents of the exact issue shown form a part of this specification to the extent specified herein. In the event of conflict between the documents referenced herein and the contents of this specification, the contents of this specification shall be considered a superseding requirement."
 - (2) "The following documents of the exact issue shown form a part of this specification to the extent specified herein. In the event of conflict between the documents referenced herein and the contents of this specification, the contents of this specification shall be considered a superseding requirement, except for specification (enter number of next higher-tiered specification) listed below."
 - 2.2 Non-Government documents. This paragraph shall begin with the following paragraph: "The following documents of the exact issue shown form a part of this specification to the extent specified herein. In the event of conflict between the documents referenced herein and the contents of this specification, the contents of this specification shall be considered a superseding requirement. " The source for all documents not available through normal Government

stocking activities shall be listed. The following paragraph shall be placed at the conclusion of the list when applicable: "Technical society and technical association specifications and standards are generally available for reference from libraries. They are also distributed among technical groups and using Federal Agencies. " Non-Government documents shall be listed by document number and title in the same order as under 2.1.

3. Interface requirements. This section be divided into the following paragraphs to specify the requirements for those interfaces to which this IRS applies.

3.1 Interface identification and diagrams. This paragraph shall identify the interfaces to which this specification applies. The interfacing items may include systems, other configuration items, and support software and hardware, such as utilities and test software, databases, and items in the communications environment. The identification of each item shall include its name, number, version, and documentation references. The identification shall state which items already exist (and therefore impose interface requirements on interfacing items) and which are being developed or modified (thus having interface requirements imposed on them). One or more interface diagrams, as appropriate, shall be provided to depict the interfaces. Each interface shall be identified by name and project-unique identifier, and shall specify, as applicable, the type of interface required (sequential or concurrent operation, real-time data transfer, store-and-retrieve data transfer, operator controlled, etc.).

3.x (Interface name and project-unique identifier). This paragraph (beginning with 3.2) shall identify an interface by name and project-unique identifier, shall state its purpose, and shall be divided into the following subparagraphs. Requirements for an interface may cover:

- 1) characteristics of the data sent/output by an existing item;
- 2) characteristics that data must have to be received/input by an existing item;
- 3) requirements a new or being-modified item must meet with respect to data sent/output to interfacing items;
- 4) requirements a new or being-modified item must meet with respect to data it must be able to

receive/input from interfacing items; or any meaningful combination or variation of these options. When describing interface characteristics of existing items, read "established" for "required."

3.x.1 Data element requirements. This paragraph shall specify any

requirements pertaining to the data elements to be transmitted between the interfacing items, including, as applicable:

- a. A project-unique identifier for the data element
- b. A brief description of the data element
- c. The CSCI, HWCI, or other item that is the source of the data element, and an indication of which of these, if any, is imposing the requirement
- d. The CSCI(s), HWCI(s), or other item(s) that are the recipients of the data element, and an indication of which of these, if any, is imposing the requirement
- e. The units of measure in which the data element must be sent or received, such as seconds, meters, kilohertz, dollars, etc.
- f. The limit/range of values that must be sent or received for the data element (for constants, provide the actual value; when applicable, state allowable codes, allowable messages, allowable message types.)
- g. The accuracy that must be possessed by the data element (permissible deviation from an ideal value)
- h. The precision or resolution with which the data element must be sent or received, in terms of number of significant digits
- i. The timing characteristics with which the data element must be sent or received (how often transmitted or received, transmitted for how long, etc.)
- j. Legality checks the data element must be able to pass
- k. The data type (such as integer, ASCII, real, enumerated, etc.) in which the data element must be sent or received
- l. The data representation/format in which the data elements must be sent or received
- m. The sequence and other dependencies with which the data

received from the information that the
method of determination of variation of
system. When the system is
characterized by existing data, the
"estimated" or "expected".

2.2.1. This document is intended for the purpose of
specifying the

requirements for the data element to be
transmitted between the information system. Included
in this document are:

- a. A general description of the data element
b. A brief description of the data element
c. The data element, its structure and the
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elements must be sent or received

3.x.2 Messages or other data assemblies. This paragraph shall specify

any requirements concerning messages or other assemblies of data elements to be transmitted between the interfacing items. It shall identify each such message or assembly by name and project[^]unique identifier and shall describe the assignment of data elements to each message or assembly.

3.x.3 Interface priorities. This paragraph shall specify any requirements concerning the relative priority of the interface or the data elements, messages, or assemblies transmitted between the interfacing items.

3.x.4 Interface/communication protocols. This paragraph shall be

divided into the following subparagraphs to specify any requirements concerning commercial, military, or proprietary communications protocols to be used for the interface.

3.x.4.y (Protocol name). This paragraph shall identify a protocol by

name and shall specify or reference the requirements for the protocol, including, as applicable:

- a. Fragmentation and reassembly of messages
- b. Message formatting
- c. Legality checks, error control, and recovery procedures,
including fault tolerance, handling of "out-of-bounds" conditions, and features to ensure continuity of operations in the event of emergencies
- d. Synchronization, including connection establishment,
maintenance, termination, and timing
- e. Flow control, including sequence numbering, window size, and
buffer allocation
- f. Data transfer rate, whether periodic or aperiodic,
and
minimum interval between transfers
- g. Routing, addressing, and naming conventions
- h. Transmission services, including priority and grade
- i. Status, identification, notification, and any other
reporting features
- j. Security and privacy, including encryption, user authentication, compartmentalization, and auditing

4. Qualification requirements. This section shall be

elements must be used or ignored

1.1.1. The following elements shall be used or ignored as follows:

any regularity, consistency, or other characteristics of the elements to be transmitted between the interested parties. If the elements are not used, the elements shall be used only in the case of the elements to be transmitted and shall be used in the case of the elements to be received.

1.1.2. The following elements shall be used or ignored as follows:

1.1.3. The following elements shall be used or ignored as follows:

1.1.4. The following elements shall be used or ignored as follows:

1.1.5. The following elements shall be used or ignored as follows:

1.1.6. The following elements shall be used or ignored as follows:

1.1.7. The following elements shall be used or ignored as follows:

1.1.8. The following elements shall be used or ignored as follows:

1.1.9. The following elements shall be used or ignored as follows:

divided into the following paragraphs to specify the qualification requirements associated with the interfaces.

4.1 Qualification methods. This paragraph shall define a set of qualification methods and shall specify the qualification method(s) to be used to ensure that each requirement in section 3 has been met. A table may be used to present this information, or each requirement in Section 3 may be annotated with the method(s) to be used. Qualification methods may include:

- a. **Demonstration:** The operation of a CSCI, or combination of interfacing items, that relies on observable functional operation not requiring the use of instrumentation or special test equipment.
- b. **Test.** The operation of a CSCI, or combination of interfacing items, using instrumentation or special test equipment to collect data for later analysis.
- c. **Analysis:** The processing or examining data obtained from other qualification methods. Examples are reduction, interpretation, or extrapolation of test results.
- d. **Inspection:** The visual examination of CSCI code, document-ation, etc.

4.2 Special qualification requirements. This paragraph shall be divided into subparagraphs as needed to specify any special qualification requirements associated with the interfaces to which this specification applies. This paragraph shall identify and describe, if applicable, special tools, techniques (e.g., test formulas, algorithms), procedures, facilities, and acceptance limits. For each special test the following information shall be specified:

- a. A project-unique identifier for the test
- b. The paragraph number(s) of the requirements to which the test applies
- c. A description of the test, such as peak-load stress test for 24 hour duration

divided into the following categories as shown in the
classification system attached with this
letter.

Qualitative methods. This category shall include
any of qualitative methods and shall include the
qualitative methods which are used in the field and
in the laboratory. It shall include the methods used
in the field and in the laboratory. It shall include the
methods used in the field and in the laboratory.

Quantitative methods. The question of a quantitative
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method of measurement. It shall include the methods used
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Field methods. The question of a field method of
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measurement. It shall include the methods used in the
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Laboratory methods. The question of a laboratory
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methods used in the field and in the laboratory. It
shall include the methods used in the field and in the
laboratory.

d. The level of the test (software unit, CSCI, segment, or system level)

5. Preparation for delivery. This section shall state "NONE."
6. Notes. This section shall contain any general information that aids in understanding this document (e.g., background information, glossary, rationale, etc.). This section shall include an alphabetical listing of all acronyms, abbreviations and their meanings as used in this document and a list of any terms and definitions needed to understand this document.
7. Appendixes. Appendixes may be used to provide information published separately for convenience in document maintenance (e.g., charts, classified data). As applicable, each appendix shall be referenced in the main body of the document where the data would normally have been provided.

DOCUMENT: BLM 80027B

INTERFACE DESIGN DOCUMENT (IDD)

CONTENTS: This document provides the interface design for the BLM 80027B system. It includes the following sections:

1. Introduction
2. System Overview
3. Interface Requirements
4. Data Flow Diagrams
5. Error Handling
6. Security
7. Performance
8. Testing
9. Implementation
10. Maintenance

The IDD is a critical document in the system development process. It provides a clear and concise description of the system's interface requirements and design. It is used to guide the development of the system and to ensure that the system meets the user's needs.

The IDD is a living document that is updated as the system evolves. It is the responsibility of the system designer to keep the IDD current and to ensure that it accurately reflects the system's interface requirements and design.

1. INTRODUCTION

- 1.1 Purpose
- 1.2 Scope
- 1.3 Definitions
- 1.4 References
- 1.5 Abbreviations
- 1.6 Symbols
- 1.7 Units
- 1.8 Conventions
- 1.9 Assumptions
- 1.10 Constraints

- 2.1 System Overview
- 2.2 Functional Requirements
- 2.3 Performance Requirements
- 2.4 Security Requirements
- 2.5 Interface Requirements
- 2.6 Data Requirements
- 2.7 Error Handling Requirements
- 2.8 Testing Requirements
- 2.9 Implementation Requirements
- 2.10 Maintenance Requirements

DOCUMENT: NLM 800178

INTERFACE DESIGN

DOCUMENT

(DD)

INTERFACE DESIGN DOCUMENT (IDD)

PURPOSE: The Interface Design Document (IDD) describes the detailed design of one or more interfaces between one or more Computer Software Configuration Items (CSCIs) and other configuration items or critical items.

The IDD may be used: a) To document the interface characteristics of existing CSCIs (saying: "To send data to, or receive data from, these CSCIs, you must follow these rules") or b) To describe the interface characteristics selected for new or being-modified CSCIs in response to interface requirements (saying: "The CSCIs will send/receive data in accordance with the following rules").

CONTENT: This Data Item Description (DID) contains the format and content preparation instructions.

An alternative to this DID may be used for small development projects by incorporating the data from this DID into the Consolidated Software Design Document.

The IDD and its companion Interface Requirements Specification (IRS) serve to communicate and control interface design decisions.

Paragraphs that have been tailored out of the DID shall result in the corresponding paragraph number and title in the document, followed by "This paragraph has been tailored out." For data delivered in an alternative form, this representation need occur only in the table of contents or equivalent.

DOCUMENT STRUCTURE:

1. Scope
 - 1.1 Identification
 - 1.2 System overview
 - 1.3 Document overview
2. Referenced documents
3. Interface design
 - 3.1 Interface identification and diagrams
 - 3.x (Interface name and project-unique identifier)
 - 3.x.1 Data elements
 - 3.x.2 Messages or other data assemblies
 - 3.x.3 Interface priorities
 - 3.x.4 Interface/communication protocols
 - 3.x.4.y (Protocol name)
4. Notes

5. Appendixes

1. Scope. This section shall be divided into the following paragraphs.
 - 1.1 Identification. This paragraph shall contain a full identification of the system(s), CSCIs(s), and interfaces to which this document applies, including, as applicable, identification number(s), title(s), abbreviation(s), version number(s), and release number(s).
 - 1.2 System overview. This paragraph shall briefly state the purpose of the system(s), software, and interfaces to which this document applies. It shall describe the general nature of the system and software; summarize the history of system development, operation, and maintenance; identify the project sponsor, user, developer, and support agencies; identify current and planned operating sites; and list other relevant documents.
 - 1.3 Document overview. This paragraph shall summarize the purpose and contents of this document.
2. Referenced documents. This section shall list by document and title all documents referenced in this document. This section shall also identify the source for all documents not available through normal Government stocking activities.
3. Interface design. This section shall be divided into the following paragraphs to describe the interface design (that is, the specific interface characteristics selected to respond to the interface requirements) for those interfaces to which this IDD applies. If part or all of this information is documented elsewhere, it may be referenced.
 - 3.1 Interface identification and diagrams. This paragraph shall describe for each CSCI to which this IDD applies, its relationship to the other HWCIs, CSCIs, or critical items with which it interfaces. This description may be provided by one or more interface diagrams, as appropriate, and shall characterize each interface (sequential or concurrent operation, real-time data transfer, store-and-retrieve data transfer, operator controlled, etc.).
 - 3.x (Interface name and project-unique identifier). This paragraph (beginning with 3.2) shall identify an interface by name and project-unique identifier and shall state its purpose. This paragraph shall be divided into the following subparagraphs.
 - 3.x.1 Data elements. This paragraph shall provide, possibly

in a data

element definition table, the following information, as applicable, for each data element transmitted between the interfacing items:

- a. A project-unique identifier for the data element
- b. A brief description of the data element
- c. The CSCI, HWCI, or other item that is the source of the data element
- d. The CSCI(s), HWCI(s), or other item(s) that are the recipients of the data element
- e. The units of measure of the data element, such as seconds, meters, dollars
- f. The limit/range of values of the data element (for constants, provide the actual value)
- g. The accuracy of the data element
- h. The precision or resolution of the data element in terms of significant digits
- i. The timing characteristics of the data element, for example, how often sent or received, how long transmitted
- j. Legality checks the data element must be able to pass
- k. The data type, such as integer, ASCII, fixed, real, enumerated
- l. The data representation/format
- m. The sequence and other dependencies of the data element

3.x.2 Messages or other data assemblies. This paragraph shall identify

by name and project-unique identifier each message or other assembly of data elements to be transmitted between the interfacing items, and shall describe the assignment of data elements to each message or assembly. A cross-reference from each message or assembly to the data elements it contains and a cross-reference from each data element to the messages or assemblies containing it shall be provided, possibly in an appendix.

3.x.3 Interface priorities. This paragraph shall specify the relative

priority of the interface and of each data element, message, or assembly transmitted between the interfacing items.

3.x.4 Interface/communication protocols. This paragraph shall be

divided into the following subparagraphs to describe the commercial, military, or proprietary communications protocols associated with the interface.

3.x.4.y (Protocol name). This paragraph shall identify a protocol by

name and shall describe the technical details of the protocol, including, as applicable:

- a. Fragmentation and reassembly of messages
- b. Message formatting
- c. Legality checks, error control and recovery procedures,
including fault tolerance, handling of "out-of-bounds" conditions, and features to ensure continuity of operations in the event of emergencies
- d. Synchronization, including connection establishment,
maintenance, termination, and timing
- e. Flow control, including sequence numbering, window size, and
buffer allocation
- f. Data transfer rate, whether it is periodic or aperiodic, and
minimum interval between transfers
- g. Routing, addressing, and naming conventions
- h. Transmission services, including priority and
grade
- i. Status, identification, notification, and any
other
reporting features
- j. Security and privacy, including encryption, user authentication, compartmentalization, and auditing

4. Notes. This section shall contain any general information that aids in understanding this document (e.g., background information, glossary, formula derivations). This section shall include an alphabetical listing of all acronyms, abbreviations, and their meanings as used in this document and a list of any terms and definitions needed to understand this document.

5. Appendixes. Appendixes may be used to provide information published separately for convenience in document maintenance (e.g., charts, classified data). As applicable, each appendix shall be referenced in the main body of the document where the data would normally have been provided.

Assigned from the following subject areas to describe the Government, Ministry of Government Communications, and the following subject areas:

1.1.1. (Technical) (General) This program shall identify the name and shall describe the technical details of the program, including its objectives.

1.1.2. (Technical) (General) This program shall identify the name and shall describe the technical details of the program, including its objectives.

1.1.3. (Technical) (General) This program shall identify the name and shall describe the technical details of the program, including its objectives.

1.1.4. (Technical) (General) This program shall identify the name and shall describe the technical details of the program, including its objectives.

1.1.5. (Technical) (General) This program shall identify the name and shall describe the technical details of the program, including its objectives.

DOCUMENT: BLM 80012B

SOFTWARE DESIGN DOCUMENT (SDD)

Document Structure:

1. Introduction
 - 1.1 Identification
 - 1.2 System Overview
 - 1.3 Document Overview
2. Referenced Documents
 - 2.1 CSCI side network design
 - 2.2 CSCI design requirements
 - 2.3 CSCI architectural design
 - 2.3.1 Role in the system architecture
 - 2.3.2 SDD architecture
 - 2.4 CSCI detailed design
 - 2.4.1 Software unit name and performance identification
3. Requirements Summary
4. Notes
5. Appendix

SOFTWARE DESIGN DOCUMENT
DOCUMENT: BLM 80015B
(SDD)

DOCUMENT: BLM 80012B

SOFTWARE DESIGN DOCUMENT (SDD)

PURPOSE: The Software Design Document (SDD) describes the design of a Computer Software Configuration Item (CSCI).

CONTENTS: It describes CSCI-wide design decisions and conventions, the CSCI architecture, the allocation of CSCI requirements to software units, and the design details needed to code the software corresponding to each unit in the selected programming language.

The SDD is used by the Bureau of Land Management to obtain visibility into the design, to verify that all CSCI requirements have been allocated for implementation, and to assess the supportability of the software.

Document Structure:

1. Scope.
 - 1.1 Identification.
 - 1.2 System overview.
 - 1.3 Document overview.
2. Referenced documents.
3. CSCI-wide behavioral design.
4. CSCI design conventions
5. CSCI architectural design
 - 5.1 Role in the system architecture
 - 5.2 CSCI architecture
6. CSCI detailed design
 - 6.x (Software unit name and project-unique identifier)
7. Requirements traceability
8. Notes
9. Appendixes

1. Scope. This section shall be divided into the following paragraphs.
- 1.1 Identification. This paragraph shall contain a full identification of the system and the CSCI to which this document applies, including, as applicable, identification number(s), title(s), abbreviation(s), version number(s), and release number(s).
- 1.2 System overview. This paragraph shall briefly state the purpose of the system and the software to which this document applies. It shall describe the general nature of the system and software; summarize the history of system development, operation, and maintenance; identify the project sponsor, user, developer, and support agencies; identify current and planned operating sites; and list other relevant documents.
- 1.3 Document overview. This paragraph shall summarize the purpose and contents of this document.
2. Referenced documents. This section shall list by document number and title all documents referenced in this document. This section shall also identify the source for all documents not available through normal Government stocking activities.
3. CSCI-wide behavioral design. This section shall be divided into paragraphs as needed to describe CSCI design decisions that transcend the internal structure of the CSCI. Examples may include decisions about: how the CSCI will appear to the user, how the CSCI will behave, appearance of displays/reports, meanings of console keys, and other choices for meeting the CSCI requirements. If all such decisions are explicit in the CSCI requirements or are deferred to the design of the CSCI's software units, this section may so state. Otherwise, this section shall include, as applicable:
 - a. Decisions on allowed/expected inputs from users and other sources, including name(s), source, media, volume, frequency, sequence, priority, timing, security, privacy, format, units of measure, range of values, abbreviations, codes, examples.
 - b. Decisions on planned behavior in response to each input, including actions, sequence, conditional behavior,

1. This section shall be divided into the following paragraphs:

1.1 Identification. This paragraph shall contain a list of the system and the DDC to which this document applies, including, as applicable, identification number, label, abbreviation, and other relevant information.

1.2 System Description. This paragraph shall contain the purpose of the system and the software to which this document applies. It shall describe the general nature of the system and software, including the history of system development, operation, and maintenance, and any other relevant information.

1.3 Document Description. This paragraph shall contain the purpose of this document.

2. Technical Description. This section shall list by document number and title all documents referenced in this document. This section shall also identify the source for all documents and software through external documentation, including electronic.

3. Software Development. This section shall be divided into the following paragraphs:

a. Software Development. This paragraph shall contain a list of all software development decisions made by the DDC, including the software development process, the software development environment, the software development tools, and the software development results. It shall also contain a list of all software development decisions made by the DDC, including the software development process, the software development environment, the software development tools, and the software development results.

b. Software Development. This paragraph shall contain a list of all software development decisions made by the DDC, including the software development process, the software development environment, the software development tools, and the software development results. It shall also contain a list of all software development decisions made by the DDC, including the software development process, the software development environment, the software development tools, and the software development results.

c. Software Development. This paragraph shall contain a list of all software development decisions made by the DDC, including the software development process, the software development environment, the software development tools, and the software development results. It shall also contain a list of all software development decisions made by the DDC, including the software development process, the software development environment, the software development tools, and the software development results.

timing, selected equations /algorithms/rules, disposition, and handling of illegal or "out-of-bounds" inputs.

c. Decisions on CSCI-produced outputs (displays, reports, etc.), including name(s), format/layout, media, volume, frequency, priority, timing, recipients, forms, security, privacy, units of measure, range of values, abbreviations, codes, disposition, examples.

d. Decisions on CSCI-contained databases/data banks, including
(1) contents: size, records/entries, media, security, privacy, retention schedule; (2) data elements: name(s), definitions, units, formats, range, abbreviations, security, privacy, and codes for the data elements; (3) relationship to CSCI capabilities/functions; (4) data retention/reporting. Reference may be made to Database Design Documents for this information.

e. Decisions on the type of flexibility to be built into the CSCI for adapting to changing requirements.

f. Decisions on the levels and types of availability, security, privacy, and continuity of operations to be offered by the CSCI.

4. CSCI design conventions. This section shall explain any rules, schemes, and conventions used in designing the CSCI and expressing that design. Design standards may be referenced. This information shall include, as applicable:

a. Mnemonic identifiers and their use in labeling software units, data structures, data elements, storage areas, etc., including provisions for unique naming at different sites.

b. Conventions for design diagrams, listings, abbreviations, comments, and symbols appearing in diagrams and listings.

c. Standard data elements and related features.

5. CSCI architectural design. This section shall be divided into the following paragraphs to describe the CSCI architectural

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design. The information may be presented graphically, for example in diagrams, tables, or flow charts. If diagrams or other graphical representations contain information required by more than one paragraph, they may be presented once and referenced from subsequent paragraphs rather than repeated.

5.1 Role in the system architecture. This paragraph shall describe the role of the CSCI within the system architecture, including the purpose of each external interface of the CSCI. A system architecture diagram may be used to show the relationships between this CSCI and other configuration items in the system.

5.2 CSCI architecture. This paragraph shall describe the internal architecture of the CSCI. If a system operates in states or modes, it shall identify each state or mode and the changes in (a) through (d) below for each. This paragraph shall:

a. Identify and state the purpose of each software unit comprising the architecture.

b. Describe the structure (such as network, hierarchical) of the CSCI in accordance with the methodology described in the software development plan, including, as applicable:

1) The flow of execution control among software units. For any dynamically controlled sequencing during the CSCI's operations, include:

a) The method for sequence control

b) The logic and input conditions of that method, such as timing variations, timing relationships between interrupt or sensing operations, priority assignments.

c) The flow of control for exceptions and other error detection and recovery features.

d) The flow of control between concurrently executing processes.

2) The flow of data among software units.

c. Identify any non-developmental software to be

design. The information may be presented graphically, for example in diagrams, tables, or flow charts. It is important to ensure that the information is presented in a way that is easy to understand and that it is presented in a way that is consistent with the overall design of the document.

2.1.1. The first step in the design process is to identify the requirements of the system. This involves understanding the purpose of the system, the users who will be using it, and the environment in which it will be used. Once the requirements are identified, the next step is to develop a system architecture. This involves defining the components of the system and how they will interact with each other.

2.1.2. The second step in the design process is to develop a system architecture. This involves defining the components of the system and how they will interact with each other. The architecture should be designed to meet the requirements of the system and to be scalable and flexible enough to accommodate future changes.

2.1.3. The third step in the design process is to develop a system architecture. This involves defining the components of the system and how they will interact with each other. The architecture should be designed to meet the requirements of the system and to be scalable and flexible enough to accommodate future changes.

2.1.4. The fourth step in the design process is to develop a system architecture. This involves defining the components of the system and how they will interact with each other. The architecture should be designed to meet the requirements of the system and to be scalable and flexible enough to accommodate future changes.

2.1.5. The fifth step in the design process is to develop a system architecture. This involves defining the components of the system and how they will interact with each other. The architecture should be designed to meet the requirements of the system and to be scalable and flexible enough to accommodate future changes.

2.1.6. The sixth step in the design process is to develop a system architecture. This involves defining the components of the system and how they will interact with each other. The architecture should be designed to meet the requirements of the system and to be scalable and flexible enough to accommodate future changes.

2.1.7. The seventh step in the design process is to develop a system architecture. This involves defining the components of the system and how they will interact with each other. The architecture should be designed to meet the requirements of the system and to be scalable and flexible enough to accommodate future changes.

2.1.8. The eighth step in the design process is to develop a system architecture. This involves defining the components of the system and how they will interact with each other. The architecture should be designed to meet the requirements of the system and to be scalable and flexible enough to accommodate future changes.

2.1.9. The ninth step in the design process is to develop a system architecture. This involves defining the components of the system and how they will interact with each other. The architecture should be designed to meet the requirements of the system and to be scalable and flexible enough to accommodate future changes.

2.1.10. The tenth step in the design process is to develop a system architecture. This involves defining the components of the system and how they will interact with each other. The architecture should be designed to meet the requirements of the system and to be scalable and flexible enough to accommodate future changes.

incorporated
into the CSCI

d. Identify the allocation of memory and processing time to the software units. The allocation may be illustrated by a memory/processing time table.

6. the CSCI detailed design. This section shall be divided into following paragraphs to provide a design description of each software unit of the CSCI. The information may be presented graphically, for example in diagrams, tables, or flow charts; in a program design language; or by reference to other design representations including headers of the code. If diagrams or other representations contain information required by more than one paragraph, the diagram or representation may be presented once and referenced from subsequent paragraphs rather than repeated.

6.x (Software unit name and project-unique identifier). This paragraph shall identify a software unit by name and project-unique identifier. Alternatively, it may identify a group of software units, with each software unit identified in a subparagraph numbered 6.x.y. The design description of each software unit shall include the following, as applicable:

- a. The purpose of the software unit.
- b. The requirements allocated to the software unit from the applicable requirements specification(s).
- c. The derived design requirements for the software unit. For example, the algorithms to be incorporated into the software unit.
- d. Any constraints, limitations, or unusual features in the design of The software unit.
- e. The programming language and rationale for its use if the software unit or any part of it is to be coded in a programming language other than the specified CSCI language.
- f. If part or all of the software unit is to be implemented by existing reusable software, the identifier of the reusable software, the software library in which it resides, and the design document in which its design can be found.

g. The program library in which the software unit is to be placed.

h. The inputs, outputs, and other data elements of the software unit, including, as applicable for each:

- 1) Project-unique identifier.
- 2) Brief description including purpose.
- 3) Units of measure, such as knots, seconds, meters, dollars.
- 4) Limit/range of values (for constants, the actual value)
- 5) Accuracy.
- 6) Precision/resolution in terms of significant digits
- 7) Priority.
- 8) Frequency at which the data element is input, calculated, refreshed, or output such as 10 Khz, 50 Msec, etc.
- 9) Legality checks to be performed on the data element etc.
- 10) D a t a representation/format/structure.
- 11) Sources, including other software units where the data element is set or calculated.
- 12) Destinations, including other software units where the data element is used.
- 13) Maximum size and storage needs.
- 14) Access method, such as random or sequential.

i. The logic flow to be used by the software unit, including:

- 1) Conditions under which software unit execution is initiated.
- 2) Conditions under which control is passed to other software units.
- 3) Response and response time to each input, including data conversion, renaming, and data transfer operations.
- 4) Dynamically controlled sequencing during the software unit's operations, including:
 - a) The method for sequence control.
 - b) The logic and input conditions of that

2. The program library in which the software was placed.

3. The inputs, outputs, and other data elements of the software, including, as appropriate, its name.

4. Project name identifier
5. Date of development including software
6. Date of revision, and as noted, revision
7. Date of revision, and as noted, revision

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43. Description of values from comparison, the

method, such
as timing variations, priority
assignments.

c) Data transfer in and out of memory.

d) The sensing of discrete input signals,
and timing
relationships between interrupt
operations within the software unit.

7. Requirements traceability. This section shall provide traceability from the CSCI requirements to the software units. The traceability may be shown in a table.

8. Notes. This section shall contain any general information that aids in understanding this document (e.g., background information, glossary, formula derivations, rationale). This section shall include an alphabetical listing of all acronyms, abbreviations, and their meanings as used in this document and a list of any terms and definitions needed to understand this document.

9. Appendixes. Appendixes may be used to provide information published separately for convenience in document maintenance (e.g., charts, classified data). As applicable, each appendix shall be referenced in the main body of the document where the data would normally have been provided.

DOCUMENT: BLM 80032B

DATABASE DESIGN DOCUMENT (DBDD)

This document contains a description of the database system design. It is intended to be used as a reference for the development of the database system. The design is based on the requirements of the system and is intended to be used as a reference for the development of the database system.

This document contains a description of the database system design. It is intended to be used as a reference for the development of the database system. The design is based on the requirements of the system and is intended to be used as a reference for the development of the database system.

Paragraphs that have been deleted are indicated by a line through the text. The text in the document is intended to be used as a reference for the development of the database system.

Document Structure

1. Page
- 1.1 Introduction
- 1.2 Database Design
- 1.3 Database Design
2. Database Design
- 2.1 Database Design
- 2.1.1 Database Design
- 2.1.2 Database Design
- 2.1.3 Database Design
- 2.1.4 Database Design
- 2.1.5 Database Design
- 2.1.6 Database Design
- 2.1.7 Database Design
- 2.1.8 Database Design
- 2.1.9 Database Design
- 2.1.10 Database Design
- 2.2 Database Design
- 2.3 Database Design
- 2.3.1 Database Design
- 2.3.2 Database Design
- 2.4 Database Design
- 2.5 Database Design
- 2.6 Database Design
- 2.7 Database Design
- 2.8 Database Design
- 2.9 Database Design
- 2.10 Database Design

DOCUMENT: BLM 8001211
DATABASE DESIGN DOCUMENT
(DDDD)

DATABASE DESIGN DOCUMENT (DBDD)

PURPOSE: A Database Design Document (DBDD) describes the logical and physical design of a database and gives information necessary for the construction of the database and for its use by application programmers.

A DBDD is prepared when multiple Computer Software Configuration Items (CSCIs) will use the same database or when a database used by a single CSCI is sufficiently complex that its structure cannot be readily described in the CSCI's Software Design Document (SDD). The design of a Database Management System (DBMS) is described in an SDD or equivalent document, rather than in a DBDD.

CONTENTS: This document contains a description of the database environment and system information regarding the DBMS.

Paragraphs that have been tailored out of the DID shall result in the corresponding paragraph number and title in the document, followed by "This paragraph has been tailored out."

Document Structure:

1. Scope
 - 1.1 Identification
 - 1.2 Database overview
 - 1.3 Document overview
2. Referenced documents
3. Database overview
 - 3.1 Database environment
 - 3.1.1 Systems using the database
 - 3.1.2 Relationship to other databases
 - 3.1.3 Storage requirements
 - 3.1.4 Physical mapping of database files
 - 3.1.5 Communications environment
 - 3.2 Labeling conventions
 - 3.3 Organization of the database
 - 3.3.1 Conceptual model
 - 3.3.2 Physical allocation
 - 3.4 Special instructions
 - 3.5 Support software available for handling the database
 - 3.6 Security, privacy, and criticality
4. Database administrative information
 - 4.1 Responsibility
 - 4.2 System information
 - 4.2.1 Database Management System (DBMS) configuration

DATABASE DESIGN DOCUMENT (DDB)

PURPOSE: A Database Design Document (DDB) describes the logical and physical design of a database and gives information necessary for the construction of the database and for its use by application programmers.

A DDB is prepared when a logical database design is developed from a DDB. It will use the same database as the logical design but will be a single DDB. It will contain all the information that the database design is needed to develop a DDB. The design of a database system (DDB) is described in an DDB as a logical design, rather than as a DDB.

SCOPE: This document contains a description of the database, including all system information regarding the DDB.

Paragraphs have been added to the DDB which were in the corresponding paragraph number and title in the document. Below is a list of paragraphs that have been added.

Database Structure

1. Scope
 - 1.1 Identification
 - 1.2 Database overview
 - 1.3 Document overview
2. Database description
 - 2.1 Database overview
 - 2.2 Database structure
 - 2.3 Database design
 - 2.3.1 System using the database
 - 2.3.2 Relational or other database
 - 2.3.3 Storage requirements
 - 2.3.4 Physical layout of database files
 - 2.3.5 Database security
 - 2.4 Accessing information
 - 2.4.1 Organization of the database
 - 2.4.2 Computerized model
 - 2.4.3 Physical structure
 - 2.5 Special features
 - 2.5.1 Report writing facilities for handling the database
 - 2.5.2 Security, backup, and recovery
 - 2.5.3 Database administration information
3. Summary
 - 3.1 Summary information
 - 3.2 Database structure

- 4.2.2 Hardware configuration
 - 4.2.3 Database software utilities
 - 4.2.4 Security and privacy
 - 4.3 Schema information
 - 4.3.1 Rationale
 - 4.3.2 Database content
 - 4.3.3 Description of schema and subschemas
 - 4.3.4 Logical structure
 - 4.3.5 Physical structure
 - 4.3.6 Sizing
 - 4.3.7 Recovery
 - 4.3.8 Requirements cross-reference
 - 4.4 Area/file information
 - 4.4.1 Rationale
 - 4.4.2 Content of areas/files
 - 4.4.3 Description of areas/files
 - 4.4.4 Storage control parameters
 - 4.4.5 Recovery
- 5. Use of the database by (identification of a CSCI or system)
 - 5.1 Descriptions of the database
 - 5.1.x (Identification of a subschema or local view)
 - 5.1.x.1 Records and their data elements
 - 5.1.x.2 Sets
 - 5.1.x.3 Areas/files
 - 5.1.x.4 Access methods
 - 5.1.x.5 Security and privacy
 - 5.2 Database software utilities
 - 5.3 Error handling
 - 5.4 Messages
- 6. Notes
- 7. Appendixes

1.1	Introduction	1.1
1.2	System Architecture	1.2
1.3	System Requirements	1.3
1.4	System Design	1.4
1.5	System Implementation	1.5
1.6	System Testing	1.6
1.7	System Deployment	1.7
1.8	System Maintenance	1.8
1.9	System Security	1.9
1.10	System Conclusion	1.10
2.1	System Overview	2.1
2.2	System Architecture	2.2
2.3	System Requirements	2.3
2.4	System Design	2.4
2.5	System Implementation	2.5
2.6	System Testing	2.6
2.7	System Deployment	2.7
2.8	System Maintenance	2.8
2.9	System Security	2.9
2.10	System Conclusion	2.10
3.1	System Overview	3.1
3.2	System Architecture	3.2
3.3	System Requirements	3.3
3.4	System Design	3.4
3.5	System Implementation	3.5
3.6	System Testing	3.6
3.7	System Deployment	3.7
3.8	System Maintenance	3.8
3.9	System Security	3.9
3.10	System Conclusion	3.10
4.1	System Overview	4.1
4.2	System Architecture	4.2
4.3	System Requirements	4.3
4.4	System Design	4.4
4.5	System Implementation	4.5
4.6	System Testing	4.6
4.7	System Deployment	4.7
4.8	System Maintenance	4.8
4.9	System Security	4.9
4.10	System Conclusion	4.10
5.1	System Overview	5.1
5.2	System Architecture	5.2
5.3	System Requirements	5.3
5.4	System Design	5.4
5.5	System Implementation	5.5
5.6	System Testing	5.6
5.7	System Deployment	5.7
5.8	System Maintenance	5.8
5.9	System Security	5.9
5.10	System Conclusion	5.10
6.1	System Overview	6.1
6.2	System Architecture	6.2
6.3	System Requirements	6.3
6.4	System Design	6.4
6.5	System Implementation	6.5
6.6	System Testing	6.6
6.7	System Deployment	6.7
6.8	System Maintenance	6.8
6.9	System Security	6.9
6.10	System Conclusion	6.10
7.1	System Overview	7.1
7.2	System Architecture	7.2
7.3	System Requirements	7.3
7.4	System Design	7.4
7.5	System Implementation	7.5
7.6	System Testing	7.6
7.7	System Deployment	7.7
7.8	System Maintenance	7.8
7.9	System Security	7.9
7.10	System Conclusion	7.10
8.1	System Overview	8.1
8.2	System Architecture	8.2
8.3	System Requirements	8.3
8.4	System Design	8.4
8.5	System Implementation	8.5
8.6	System Testing	8.6
8.7	System Deployment	8.7
8.8	System Maintenance	8.8
8.9	System Security	8.9
8.10	System Conclusion	8.10
9.1	System Overview	9.1
9.2	System Architecture	9.2
9.3	System Requirements	9.3
9.4	System Design	9.4
9.5	System Implementation	9.5
9.6	System Testing	9.6
9.7	System Deployment	9.7
9.8	System Maintenance	9.8
9.9	System Security	9.9
9.10	System Conclusion	9.10
10.1	System Overview	10.1
10.2	System Architecture	10.2
10.3	System Requirements	10.3
10.4	System Design	10.4
10.5	System Implementation	10.5
10.6	System Testing	10.6
10.7	System Deployment	10.7
10.8	System Maintenance	10.8
10.9	System Security	10.9
10.10	System Conclusion	10.10

1. Scope. This section shall be divided into the following paragraphs.
 - 1.1 Identification. This paragraph shall contain a full identification of the database to which this document applies, including, as applicable, identification number(s), title(s), abbreviation(s), version number(s), and release number(s).
 - 1.2 Database overview. This paragraph shall briefly state the purpose of the database to which this document applies. It shall describe the general nature of the database; summarize the history of its development, use, and maintenance; identify the project sponsor, user, developer, and support agencies; identify current and planned operating sites; and list other relevant documents.
 - 1.3 Document overview. This paragraph shall summarize the purpose and contents of this document.
2. Referenced documents. This section shall list by document number and title all documents referenced in this plan. This section shall also identify the source for all documents not available through normal Government stocking activities.
3. Database overview.
 - 3.1 Database environment.
 - 3.1.1 Systems using the database. This paragraph shall identify the systems that will use this database, including, as applicable, identification number(s), title(s), abbreviation(s), version number(s), and release number(s).
 - 3.1.2 Relationship to other databases. This paragraph shall indicate whether the database will supersede other databases and if so, which one(s).
 - 3.1.3 Storage requirements. This paragraph shall contain the estimated internal and peripheral storage requirements for the database. Multiple storage requirements for distributed processing shall be included, as applicable, as well as differences applying to special modes of operation following emergency, disaster, or accident.
 - 3.1.4 Physical mapping of database files. This paragraph shall provide

a mapping of the components of the database to one another and to the files on which they will be recorded.

3.1.5 Communications environment. This paragraph shall describe the data communications environment in which the database will be installed. Networks shall be described including specific information on the interface protocols. Reference may be made to other documents as applicable.

3.2 Labeling conventions. This paragraph shall discuss the internal labeling conventions used in this database design document to the extent necessary to understand and use them.

3.3 Organization of the database. This paragraph shall be divided into the following paragraphs to describe major design considerations for the organization of the database. 3.3.1 Conceptual model. This paragraph shall describe the conceptual model used for the database, portrayed by an appropriate charting technique such as an entity-relationship diagram.

3.3.2 Physical allocation. This paragraph shall provide the information needed to ensure consistency of design concerning the organization and manipulation of the physical database areas/ files. The following information shall be provided for each area/file contained in the database:

- a. General area/file design and format
- b. Rationale for the design
- c. Inter-area/file dependencies of the area/file

3.4 Special instructions. This paragraph shall contain instructions to be followed by personnel who will contribute to the generation of the database and who will use it for testing and operational purposes. Such instructions may include:

- a. Any specialized criteria for entering data into the database
- b. Source documents for the rules and procedures to be followed when submitting data for entry into the database
- c. Source documents for the machine run instructions for generating, modifying, updating, or otherwise using the database. In very large systems, where the details of such instructions are extensive,

a sequence of the components of the database is one
another and on the lines on which they will be
recorded.

Longitudinal relationships: This paragraph will
describe the

data transformation environment in which the database
will be installed. Windows shall be described
including specific information on the hardware
processor. Windows may be used as a client computer as
applicable.

Initial installation: This paragraph will discuss the
initial installation environment used in this database
system document to the extent necessary to understand
and use them.

Organization of the database: This paragraph will be
devoted to the following paragraphs to describe the
organization of the database for the organization of the
database. 2.1.1. Conceptual model: This paragraph
shall describe the conceptual model used for the
database, generated by an appropriate modeling
technique such as an entity-relationship diagram.

Physical algorithm: This paragraph will provide the
information needed to understand the design
concerning the organization and maintenance of the
physical database system files. The following
information shall be provided for each attribute
contained in the database.

General attribute design and format
2.1.2. Attribute for the data
2.1.3. Data attribute dependencies of the attribute

Initial installation: This paragraph will provide
instructions to be followed by personnel who will
contribute to the generation of the database and who
will use it for testing and operational purposes. 2.1.4
Instructions may include:

- a. Any specialized criteria for entering data into
the database
- b. Source documents for the data and procedures to
be followed
- c. Source documents for the database and instructions

Generating, modifying, updating, or deleting
using the database. To verify input, output, storage
and details of data transactions and attributes.

this paragraph may reference sections of other documents where this specific information can be found.

3.5 Support software available for handling the database. This paragraph shall identify and briefly discuss the support software directly related to the database. Descriptions shall include software name, functions, major operating considerations such as hardware setup and operating time, and references to detailed documentation. Examples of such software are:

- a. Database analysis software for reorganizing or changing the data
- b. Database sizing software for initializing or resizing the database
- c. Database loading software for moving or copying data
- d. Database repairing software

3.6 Security, privacy, and criticality. This paragraph shall contain an overview and discussion of the security, privacy and criticality considerations associated with the database.

4. Database administrative information. This section shall provide the information necessary to establish and administer this database in the described environment. For purposes of this DID, the following terms are defined:

- a. Database administration: The process of defining, organizing, managing, controlling, and protecting a database.
- b. Schema: A description, or global model, of the structure of a database.
- c. Subschema: A subset of the schema that provides a complete description of a database from the perspective of a specific application.
- d. Logical data structure: A user's view of the relationships among data elements in a database. This view may not reflect the actual form in which data are stored.
- e. Physical data structure: The form in which data are stored

This computer can perform a variety of other functions which this specific hardware can do.

Another software available for this computer is the database. This program will identify and locate data and support software directly related to the database. Description of all installed software, hardware, and operating systems, and references to related documentation. Examples of such software are:

- a. Database and data software for organization of changing data.
- b. Database and data software for initialization of existing data.
- c. Database and data software for sorting or reorganizing data.
- d. Database and data software for backup and recovery.

Another software available for this computer is the database. This program will identify and locate data and support software directly related to the database. Description of all installed software, hardware, and operating systems, and references to related documentation. Examples of such software are:

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Another software available for this computer is the database. This program will identify and locate data and support software directly related to the database. Description of all installed software, hardware, and operating systems, and references to related documentation. Examples of such software are:

on a medium.

4.1 Responsibility. This paragraph shall identify the offices responsible for database administrative functions.

4.2 System information.

4.2.1 Database Management System (DBMS) configuration. This paragraph shall identify the Database Management System (DBMS) to be used and the vendor, version or release date, and targeted hardware of the DBMS. This paragraphs shall describe any restrictions on the initialization and use of the DBMS and capabilities of the DBMS to support any intended distributed processing.

4.2.2 Hardware configuration. This paragraph shall identify the hardware configurations on which the database can reside.

4.2.3 Database software utilities. This paragraph shall list and reference the documentation of any DBMS utility software available to support the use or maintenance of the database.

4.2.4 Security and privacy. This paragraph shall describe the use and management of integrity and access controls that apply to all database components such as schema, subschemas, areas or physical files, records or tables, sets or relations, and data elements.

4.3 Schema information. This paragraph shall be divided into the following subparagraphs to describe the overall structure to be reflected in the schema or other global definition of the database.

4.3.1 Rationale. This paragraph shall explain the rationale for the chosen database structure.

4.3.2 Database content. This paragraph shall describe the content of the database, listing its data elements and indicating within which subschemas of the database they are visible.

4.3.3 Description of schema and subschemas. This paragraph shall describe the schema and each subschema of the database, including name, file type and name, Data Description

Responsibility. This paragraph shall identify the
officer responsible for database administration
functions.

System Information

Database Management System (DBMS) Identification. This

shall identify the Database Management System (DBMS) to
be used and the version or release date, and
required hardware of the DBMS. This paragraph shall
describe any restrictions on the installation and use
of the DBMS and capabilities of the DBMS to support any
required database processing.

Hardware Configuration. This paragraph shall identify

hardware configurations to which the database can
operate.

Database Software Identification. This paragraph shall list

reference the documentation of any DBMS utility
software available to support the use of capabilities of
the database.

Security and Access. This paragraph shall describe

the use and
management of integrity and access controls that apply
to all database operations and to external applications,
access to physical files, records or tables, with or
without, and data elements.

Access Information. This paragraph shall be divided

into the following sub-paragraphs to describe the
overall structure to be reflected in the database or
other related features of the database.

Relationships. This paragraph shall describe the relationships

between database structures.

Database Content. This paragraph shall describe the

contents of
the database, listing the data elements and indicating
which data elements of the database they are
visible.

Description of Tables and Subtables. This paragraph

describes the tables and each subtable of the database,
including name, file type and name, data description.

Language, access control keys, concurrence locking, data name mapping, overall area/file limitations and controls, restrictions due to redefinitions and access paths, and any other limitations or restrictions.

4.3.4 Logical structure. This paragraph shall describe and depict in a chart the logical organization of the data into records, tuples, sets, or predefined relationships.

4.3.5 Physical structure. This paragraph shall describe and depict in a chart the physical structure (e.g., areas/files, indexes, pointers) of the logical components of the database. Methods for achieving operating efficiency shall be identified.

4.3.6 Sizing. This paragraph shall provide sizing formulas for determining the storage required to support the database content and associated software.

4.3.7 Recovery. This paragraph shall describe the method for reestablishment or re-creation of the necessary schema and support files.

4.3.8 Requirements cross-reference. This paragraph shall provide a cross-reference to applicable requirements that are met by the database described in this document.

4.4 Area/file information

4.4.1 Rationale. This paragraph shall explain the rationale for the chosen physical structure of the database.

4.4.2 Content of areas/files. This paragraph shall describe the content of each area/file, listing the records it contains and explaining their purposes.

4.4.3 Description of areas/files. This paragraph shall describe each area/file, including name, type, code, mapping, limitations and controls, access procedures and mechanisms, and training or testing capabilities.

4.4.4 Storage control parameters. This paragraph shall provide information about data storage and any limiting factors, such as allocation parameters and methodology, expansion methods, paging parameters, load criteria and limits, sizing procedures or formulas, and other

language, access control, security, and other factors. This document is intended to provide a general overview of the system and its components. It is not intended to be a technical specification or a design document. It is intended to be a high-level overview of the system and its components.

4.1.1. **System Overview** - This paragraph shall describe the system and its components. It shall include a description of the system architecture, the system components, and the system interfaces.

4.1.2. **System Architecture** - This paragraph shall describe the system architecture. It shall include a description of the system components, the system interfaces, and the system data flow.

4.1.3. **System Components** - This paragraph shall describe the system components. It shall include a description of the system components, the system interfaces, and the system data flow. It shall also include a description of the system components, the system interfaces, and the system data flow.

4.1.4. **System Interfaces** - This paragraph shall describe the system interfaces. It shall include a description of the system components, the system interfaces, and the system data flow.

4.1.5. **System Data Flow** - This paragraph shall describe the system data flow. It shall include a description of the system components, the system interfaces, and the system data flow.

4.1.6. **System Security** - This paragraph shall describe the system security. It shall include a description of the system components, the system interfaces, and the system data flow.

4.1.7. **System Performance** - This paragraph shall describe the system performance. It shall include a description of the system components, the system interfaces, and the system data flow.

4.1.8. **System Reliability** - This paragraph shall describe the system reliability. It shall include a description of the system components, the system interfaces, and the system data flow.

4.1.9. **System Maintainability** - This paragraph shall describe the system maintainability. It shall include a description of the system components, the system interfaces, and the system data flow.

4.1.10. **System Scalability** - This paragraph shall describe the system scalability. It shall include a description of the system components, the system interfaces, and the system data flow.

4.1.11. **System Interoperability** - This paragraph shall describe the system interoperability. It shall include a description of the system components, the system interfaces, and the system data flow.

4.1.12. **System Compatibility** - This paragraph shall describe the system compatibility. It shall include a description of the system components, the system interfaces, and the system data flow.

4.1.13. **System Portability** - This paragraph shall describe the system portability. It shall include a description of the system components, the system interfaces, and the system data flow.

4.1.14. **System Flexibility** - This paragraph shall describe the system flexibility. It shall include a description of the system components, the system interfaces, and the system data flow.

4.1.15. **System extensibility** - This paragraph shall describe the system extensibility. It shall include a description of the system components, the system interfaces, and the system data flow.

information that affects database storage.

4.4.5 Recovery. This paragraph shall describe the method or refer to documentation about the method to reconstruct the necessary data and structure.

5. Use of the database by (identification of a CSCI or system). The purpose of this section is to provide technical information needed by applications developers to use the database and its utilities, procedures, processes, and structure in the development, maintenance, or enhancement of software. When more than one CSCI or system will use the database, a separate section (Sections 5 through n) may be written for each

5.1 Descriptions of the database. This paragraph shall be divided into the following subparagraphs to provide detailed technical descriptions of the database.

5.1.x (Identification of a subschema or local view). This paragraph shall identify the title or name of a subschema used by the system or CSCI and shall state its purpose.

5.1.x.1 Records and their data elements. This paragraph shall list and describe each of the records in the subschema. The description shall provide name, code, size, and any other attributes needed to complete the description. This paragraph shall also list and describe the data elements that make up the record and their sources.

5.1.x.2 Sets. This paragraph shall list and describe each of the sets or predefined relations in the subschema.

5.1.x.3 Areas/files. This paragraph shall list and describe any areas/files of the database. Descriptions shall provide name, code, type, allocation, expansion, load factor, database keys, and page size.

5.1.x.4 Access methods. This paragraph shall list and describe each of the unique access routines and query path structures that have been developed for this subschema or local view.

5.1.x.5 Security and privacy. This paragraph shall describe the controls to be used to protect the subschema from unauthorized modification.

- 5.2 Database software utilities. This paragraph shall provide information regarding any utility software that has been developed to aid in database use for this CSCI or system.
- 5.3 Error handling. This paragraph shall describe those error handling routines and procedures of the CSCI or system that are available during execution of database software.
- 5.4 Messages. This paragraph shall provide a list of all messages output to the CSCI or system during execution of database software.
6. Notes. This section shall contain any general information that aids in understanding this document (e.g., background information, glossary). This section shall include an alphabetical listing of all acronyms, abbreviations, and their meanings as used in this document, and a list of any terms and definitions needed to understand this document. If section 5 has been expanded into section(s) 6,...n, this section shall be numbered as the next section following section n.
- A. Appendixes. Appendixes may be used to provide information published separately for convenience in document maintenance (e.g., charts, classified data). As applicable, each appendix shall be referenced in the main body of the document where the data would normally have been provided. Appendixes may be bound as separate documents for ease in handling. Appendixes shall be lettered alphabetically (A, B, etc.).

DOCUMENT: BLM C-80012B

**CONSOLIDATED SOFTWARE
DESIGN DOCUMENT (C-SDD)**

Alternate For:

System/Segment Document	- BLM 80534B
Software Design Document	- BLM 80012B
DataBase Design Document	- BLM 80032B
Interface Design Document	- BLM 80027B

DESIGN DOCUMENT (C-2DD)
CONSOLIDATED SOFTWARE
DOCUMENT: BLM C-200123

REVISIONS

1.0	Initial Design Document	BLM 200123
2.0	Revised Design Document	BLM 200123
3.0	Revised Design Document	BLM 200123
4.0	Revised Design Document	BLM 200123

DOCUMENT: BLM C-80012B

CONSOLIDATED SOFTWARE DESIGN DOCUMENT (C-SDD)

PURPOSE: The Consolidated Software Design Document (C-SDD) is a single document encompassing the design of a system, the design of each CSCI in the system, the design of the CSCI-external interfaces, and the design of each database in the system.

CONTENTS: It contains, in summary form, the contents of the System/Segment Design Document (SSDD), Software Design Document(s) (SDDs), Interface Design Document(s) (IDDs), and Database Design Document(s) (DBDDs) for a project

A C-SDD is written as an alternative to the individual design documents cited above. It is best suited to a project on which a single design document is most effective.

Paragraphs that have been tailored out of the DID shall result in the corresponding paragraph number and title in the document, followed by "This paragraph has been tailored out."

Document Structure:

1. Scope
 - 1.1 Identification
 - 1.2 System overview
 - 1.3 Document overview
2. Referenced documents
3. System/segment design
 - 3.1 System/segment behavioral design
 - 3.2 System architecture
 - 3.3 Allocation of requirements
 - 3.4 Processing resources
 - 3.5 Requirements traceability
4. Software (CSCI) design
 - 4.x (CSCI name and project-unique identifier).
 - 4.x.1 CSCI-wide behavioral design
 - 4.x.2 CSCI design conventions
 - 4.x.3 CSCI architectural design
 - 4.x.4 CSCI detailed design
 - 4.x.4.y (Software unit name and project-unique identifier)
 - 4.x.5 Requirements traceability
5. Interface design
 - 5.1 Interface identification and diagrams
 - 5.x (Interface name and project-unique identifier)

CONSOLIDATED SOFTWARE DESIGN DOCUMENT AIA-000123

SYNOPSIS: The Consolidated Software Design Document (AIA-000123) is a single document encompassing the design of a system, the design of each SCD in the system, and the design of each SCD-related interface, and the design of each interface in the system.

CONTENTS: It contains, in summary form, the contents of the System/Software Design Document (AIA-000123), Software Design Document (AIA-000124), Interface Design Document (AIA-000125), and Software Design Document (AIA-000126) for a project.

A SCD is written as an alternative to the individual design documents listed above. It is best written in a project in which a single design document is more effective.

References have been retained out of the list items in the corresponding paragraphs above and this is the only reference in the document. This paragraph has been retained out of the list items.

Document Structure

1	1.0000
1.1	1.1.0000 Identification
1.2	1.2.0000 System Overview
1.3	1.3.0000 System Overview
1.4	1.4.0000 System Overview
1.5	1.5.0000 System Overview
1.6	1.6.0000 System Overview
1.7	1.7.0000 System Overview
1.8	1.8.0000 System Overview
1.9	1.9.0000 System Overview
1.10	1.10.0000 System Overview
1.11	1.11.0000 System Overview
1.12	1.12.0000 System Overview
1.13	1.13.0000 System Overview
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1.100	1.100.0000 System Overview

- 5.x.1 Data elements
- 5.x.2 Messages or other data assemblies
- 5.x.3 Interface priorities
- 5.x.4 Interface/communication protocols
- 6. Database design
 - 6.x (Database name and project-unique identifier)
 - 6.x.1 Database overview
 - 6.x.2 Database administrative information
 - 6.x.3 Use of the database by (CSCI or system identification)
- 7. Notes
- 8. Appendixes

1.1	Introduction	1
1.2	Objectives of the study	2
1.3	Scope of the study	3
1.4	Methodology	4
1.5	Organization of the report	5
2.1	Background information	6
2.2	Current situation	7
2.3	Problems and issues	8
2.4	Analysis of the data	9
2.5	Conclusions and recommendations	10
3.1	References	11
3.2	Appendix	12
3.3	Index	13

1. Scope. This section shall be divided into the following paragraphs.
 - 1.1 Identification. This paragraph shall contain a full identification of the system and the CSCIs to which this document applies, including, as applicable, identification number(s), title(s), abbreviation(s), version number(s), and release number(s).
 - 1.2 System overview. This paragraph shall briefly state the purpose of the system and the software to which this document applies. It shall describe the general nature of the system and software; summarize the history of system development, operation, and maintenance; identify the project sponsor, user, developer, and support agencies; identify current and planned operating sites; and list other relevant documents.
 - 1.3 Document overview. This paragraph shall summarize the purpose and contents of this document.
2. Referenced documents. This section shall list by document number and title all documents referenced in this document. This section shall also identify the source for all documents not available through normal Government stocking activities.
3. System/segment design. This section shall be divided into the following paragraphs to describe the design of a system or segment.
 - 3.1 System/segment behavioral design. This paragraph shall be divided into subparagraphs as needed to describe design decisions that transcend the internal structure of the system. It shall include, as applicable:
 - a. Decisions on allowed/expected inputs/operations, including
source, media, volume, frequency, sequence, priority, timing, format, units of measure, range of values, abbreviations, and codes
 - b. Decisions on planned behavior in response to each input/operation, including sequence, timing, selected equations/algorithms/rules, and handling of illegal inputs
 - c. Decisions on system displays, reports, etc., including
formats, media, volume, frequency, priority, timing, recipients, forms, security, privacy, units of measure, range of values, abbreviations, and codes

- d. Decisions on system databases/data banks, including contents, size, records/entries, media, security, privacy, retention schedule, and names, synonyms, definitions, units, formats, range, abbreviations, and codes for the data elements
- e. Decisions on the type of flexibility and levels of availability, integrity, and confidentiality to be offered by the system

3.2 System architecture. This paragraph shall be divided into subparagraphs as needed to provide the following information, using diagrams as needed:

- a. Describe the internal structure of the system, identifying the segments, HWCIs, and CSCIs and summarizing the purpose of each
- b. Describe the relationships among the segments, HWCIs, and CSCIs, including sequence of execution, as applicable
- c. Identify, state the purpose, and provide a high-level description of each external interface of the system

3.3 Allocation of requirements. This paragraph shall be divided into subparagraphs as needed to:

- a. Identify the system requirements allocated to each HWCI
- b. Identify the system requirements allocated to each CSCI
- c. Identify the system requirements allocated to each manual operation
- d. Identify the system requirements affecting each internal HWCI-to-HWCI interface
- e. Identify the system requirements affecting each internal HWCI-to-CSCI interface
- f. Identify the system requirements affecting each internal CSCI-to-CSCI interface

3.4 Processing resources. This paragraph be divided into subparagraphs as needed to describe the processing resources to be used for the system. For each processing resource, this paragraph shall specify its hardware, programming, design, coding, and utilization characteristics, including for computer hardware:

1. Identification of system components: This section shall be divided into two parts. The first part shall describe the physical components of the system, including hardware, software, and data. The second part shall describe the functional components of the system, including processes, procedures, and personnel. This section shall be divided into two parts. The first part shall describe the physical components of the system, including hardware, software, and data. The second part shall describe the functional components of the system, including processes, procedures, and personnel.

2. Description of system architecture: This section shall describe the overall architecture of the system, including the high-level design and the detailed design. This section shall be divided into two parts. The first part shall describe the high-level design, including the system requirements, the system architecture, and the system components. The second part shall describe the detailed design, including the system architecture, the system components, and the system data.

3. Description of system components: This section shall describe the individual components of the system, including hardware, software, and data. This section shall be divided into three parts. The first part shall describe the hardware components, including the system architecture, the system components, and the system data. The second part shall describe the software components, including the system architecture, the system components, and the system data. The third part shall describe the data components, including the system architecture, the system components, and the system data.

4. Description of system processes: This section shall describe the processes of the system, including the high-level design and the detailed design. This section shall be divided into two parts. The first part shall describe the high-level design, including the system requirements, the system architecture, and the system components. The second part shall describe the detailed design, including the system architecture, the system components, and the system data.

5. Description of system procedures: This section shall describe the procedures of the system, including the high-level design and the detailed design. This section shall be divided into two parts. The first part shall describe the high-level design, including the system requirements, the system architecture, and the system components. The second part shall describe the detailed design, including the system architecture, the system components, and the system data.

6. Description of system personnel: This section shall describe the personnel of the system, including the high-level design and the detailed design. This section shall be divided into two parts. The first part shall describe the high-level design, including the system requirements, the system architecture, and the system components. The second part shall describe the detailed design, including the system architecture, the system components, and the system data.

- a. Amount of internal memory
- b. Number of bits in each computer word
- c. Processing speed
- d. Character set standard
- e. Instruction set architecture
- f. Interrupt capabilities
- g. Direct Memory Access (DMA) capabilities
- h. Channel capacities
- i. Auxiliary storage capacities
- j. Growth capabilities
- k. Diagnostic capabilities
- l. Additional computer hardware capabilities
- m. The allocation of pertinent processing resources to each CSCI

3.5 Requirements traceability. This paragraph shall provide traceability from the system requirements to the HWCIs, CSCIs, and manual operations of the system, to demonstrate that each system requirement has been allocated. The traceability may be shown in a table.

4. Software (CSCI) design. This section shall be divided into the following paragraphs to describe the design of one or more CSCIs.

4.x (CSCI name and project-unique identifier).

4.x.1 CSCI-wide behavioral design. This paragraph shall be divided into subparagraphs as needed to describe CSCI design decisions that transcend the internal structure of the CSCI. It shall include, as applicable:

- a. Decisions on allowed/expected inputs from users and other sources, including name(s), source, media, volume, frequency, sequence, priority, timing, security, privacy, format, units of measure, range of values, abbreviations, codes, examples
- b. Decisions on planned behavior in response to each input, including actions, sequence, conditional behavior, timing, selected equations/algorithms/rules, disposition, and handling of illegal or "out-of-bounds" inputs
- c. Decisions on CSCI-produced outputs (displays, reports, etc.), including name(s), format/layout, media, volume, frequency, priority, timing, recipients, forms, security, privacy, units of measure, range of values, abbreviations, codes, disposition,

examples

d. Decisions on CSCI-contained databases/data banks, including

(1) contents: size, records/entries, media, security, privacy, retention; (2) data elements: name(s), definitions, units, formats, range, abbreviations, security, privacy, codes for the data elements; (3) relationship to CSCI capabilities/functions; (4) data retention/reporting. Reference may be made to Database Design Documents.

e. Decisions on the type of flexibility and the levels and types of availability, security, privacy, and continuity of operations to be offered by the CSCI

4.x.2 CSCI design conventions. This paragraph shall explain any rules,

schemes, and conventions used in designing the CSCI and expressing that design. Design standards may be referenced. This information shall include, as applicable:

- a. Mnemonic identifiers and their use
- b. Conventions for design diagrams, listings, abbreviations, comments, and symbols appearing in diagrams and listings
- c. Standard data elements and related features

4.x.3 CSCI architectural design. This paragraph shall be divided into

subparagraphs as needed to present the following information. The information may be presented graphically, for example in diagrams, tables, or flow charts.

a. The role of the CSCI within the system architecture, including the purpose of each CSCI-external interface

b. The internal architecture of the CSCI, including the following, annotated to identify differences for each state and mode in which the CSCI operates:

- 1) The name/ID and purpose of each software unit comprising the architecture
- 2) The structure of the CSCI, including, as

applicable:

- software
- a) The flow of execution control among units, including any dynamically controlled sequencing during the CSCI's operation
 - b) The flow of data among software units
- 3) Any non-developmental software to be incorporated into the CSCI
- 4) The allocation of memory and processing time to the software units

4.x.4 CSCI detailed design. This paragraph shall be divided into the following subparagraphs to provide a design description of each software unit of the CSCI. The information may be presented graphically, for example in diagrams, tables, or flow charts; in a program design language; or by reference to other design representations including headers of the code.

4.x.4.y (Software unit name and project-unique identifier). This

paragraph shall identify a software unit by name and project-unique identifier. Alternatively, it may identify a group of software units, with each software unit identified in a subparagraph. The design description of each software unit shall include the following, as applicable:

- a. The purpose of the software unit
- b. The requirements allocated to the software unit
- c. The derived design requirements for the software unit (e.g., the algorithms to be incorporated into the software unit)
- d. Any constraints, limitations, or unusual features in the design of the software unit
- e. The programming language and rationale if different from that for the CSCI
- f. Reusable software to be used, where it resides, where its design is documented
- g. The program library in which the software unit is to be placed
- h. The inputs, outputs, and other data elements of the software unit, including, as applicable for each:

- 1) Project-unique identifier
 - 2) Brief description including purpose
 - 3) Units of measure, such as knots, seconds, meters, dollars
 - 4) Limit/range of values (for constants, the actual value)
 - 5) Accuracy
 - 6) Precision/resolution in terms of significant digits
 - 7) Priority
 - 8) Frequency at which the data element is input, calculated, refreshed, or output
 - 9) Legality checks to be performed on the data element
 - 10) Data type, such as integer, ASCII, fixed, real, enumeration
 - 11) Data representation/format/structure
 - 12) Sources, including other software units where the data element is set
 - 13) Destinations, including other software units where the data element is used
 - 14) Maximum size and storage needs
 - 15) Access method, such as random or sequential
- i. The logic flow to be used by the software unit, including:
- 1) Conditions under which software unit execution is initiated
 - 2) Conditions under which control is passed to other software units
 - 3) Response and response time to each input
 - 4) Dynamically controlled sequencing during the software unit's operations

4.x.5 Requirements traceability. This paragraph shall provide traceability from the CSCI requirements to the software units. The traceability may be shown in a table.

5. Interface design. This section shall be divided into the following paragraphs to describe the design of one or more CSCI-external interfaces, that is, the specific interface characteristics selected to respond to the CSCI-external interface requirements. If part of all of this information is documented elsewhere, it may be referenced.

5.1 Interface identification and diagrams. This paragraph shall identify and provide an overview of each interface between the CSCIs to which this document applies and other HWCIs, CSCIs, and critical items.

1	Project-System Identification	1
2	System Description Including Program	2
3	Points of Interest, such as Input, Output, and Control	3
4	Block Diagram of System (for reference, the block diagram is not required)	4
5	Functional Description in Terms of Algorithm	5
6	Flowchart of the Data Element in Input	6
7	Flowchart of the Data Element in Output	7
8	Flowchart of the Data Element in Control	8
9	Flowchart of the Data Element in Status	9
10	Flowchart of the Data Element in Error	10
11	Flowchart of the Data Element in Alarm	11
12	Flowchart of the Data Element in Test	12
13	Flowchart of the Data Element in Maintenance	13
14	Flowchart of the Data Element in Configuration	14
15	Flowchart of the Data Element in Security	15
16	Flowchart of the Data Element in Compliance	16
17	Flowchart of the Data Element in Interference	17
18	Flowchart of the Data Element in Compatibility	18
19	Flowchart of the Data Element in Reliability	19
20	Flowchart of the Data Element in Maintainability	20
21	Flowchart of the Data Element in Supportability	21
22	Flowchart of the Data Element in Testability	22
23	Flowchart of the Data Element in Verifiability	23
24	Flowchart of the Data Element in Validity	24
25	Flowchart of the Data Element in Usability	25
26	Flowchart of the Data Element in Accessibility	26
27	Flowchart of the Data Element in Interoperability	27
28	Flowchart of the Data Element in Portability	28
29	Flowchart of the Data Element in Reconfigurability	29
30	Flowchart of the Data Element in Scalability	30
31	Flowchart of the Data Element in Flexibility	31
32	Flowchart of the Data Element in Adaptability	32
33	Flowchart of the Data Element in Robustness	33
34	Flowchart of the Data Element in Fault Tolerance	34
35	Flowchart of the Data Element in Security of Information	35
36	Flowchart of the Data Element in Privacy of Information	36
37	Flowchart of the Data Element in Integrity of Information	37
38	Flowchart of the Data Element in Availability of Information	38
39	Flowchart of the Data Element in Confidentiality of Information	39
40	Flowchart of the Data Element in Authenticity of Information	40
41	Flowchart of the Data Element in Non-Repudiation of Information	41
42	Flowchart of the Data Element in Accountability of Information	42
43	Flowchart of the Data Element in Information Security	43
44	Flowchart of the Data Element in Information Privacy	44
45	Flowchart of the Data Element in Information Integrity	45
46	Flowchart of the Data Element in Information Availability	46
47	Flowchart of the Data Element in Information Confidentiality	47
48	Flowchart of the Data Element in Information Authenticity	48
49	Flowchart of the Data Element in Information Non-Repudiation	49
50	Flowchart of the Data Element in Information Accountability	50

This description may be provided by one or more interface diagrams, as appropriate, and shall characterize each interface (sequential or concurrent operation, real-time data transfer, store-and-retrieve data transfer, operator controlled, etc.)

5.x (Interface name and project-unique identifier). This paragraph (beginning with 5.2) shall identify an interface by name and project-unique identifier and shall state its purpose. This paragraph shall be divided into the following subparagraphs.

5.x.1 Data elements. This paragraph shall provide, possibly in a data

element definition table, the following information, as applicable, for each data element transmitted between the interfacing items:

- a. A project-unique identifier for the data element
- b. A brief description of the data element
- c. The CSCI, HWCI, or other item that is the source of the data element
- d. The CSCI(s), HWCI(s), or other item(s) that are the recipients of the data element
- e. The units of measure of the data element, such as seconds, meters, dollars
- f. The limit/range of values of the data element (for constants, provide the actual value)
- g. The accuracy of the data element
- h. The precision or resolution of the data element in terms of significant digits
- i. The timing characteristics of the data element, for example, how often sent or received, how long transmitted
- j. Legality checks the data element must be able to pass
- k. The data type, such as integer, ASCII, fixed, real, enumerated
- l. The data representation/format
- m. The sequence and other dependencies of the data element

5.x.2 Messages or other data assemblies. This paragraph shall identify

by name and project-unique identifier each message or other assembly of data elements transmitted between the interfacing items, and shall describe the assignment of data elements to each message or assembly. A cross-reference of each message or assembly to the data

elements it contains, and vice versa, shall be provided.

5.x.3 Interface priorities. This paragraph shall specify the relative priority of the interface and of each data element, message, or assembly transmitted between the interfacing items.

5.x.4 Interface/communication protocols. This paragraph shall be divided into subparagraphs as needed to describe the commercial, military, or proprietary communications protocols associated with the interface. Each protocol shall be identified and described, including the following, as applicable:

- a. Fragmentation and reassembly of messages
- b. Message formatting
- c. Legality checks, error control and recovery procedures,
including fault tolerance, handling of "out-of-bounds" conditions, and features to ensure continuity of operations in the event of emergencies
- d. Synchronization, including connection establishment, maintenance, termination, and timing
- e. Flow control, including sequence numbering, window size, and
buffer allocation
- f. Data transfer rate, whether periodic/apperiodic,
minimum interval between transfers
- g. Routing, addressing, and naming conventions
- h. Transmission services, including priority and grade
- i. Status, identification, notification, and any other reporting features
- j. Security and privacy, including encryption, user authentication, compartmentalization, and auditing

6. Database design. This section shall be divided into the following paragraphs to describe the logical and physical design of one or more databases.

6.x (Database name and project-unique identifier).

6.x.1 Database overview. This paragraph shall be divided into subparagraphs as needed to provide the following overview information about the database:

- a. Database environment:
 - 1) Identification of systems that will use the

elements of content, and vice versa, shall be provided.

Interfacial Protocols. This paragraph shall specify the

primary of the interface and its data elements, messages, or messages transmitted between the interfacing items.

Interfacial Communication Protocols. This paragraph

describes the communication protocols as needed to describe the communication, including the protocols associated with the interface. Each protocol shall be identified and described, including the following, as applicable:

1. Identification and description of messages
2. Message format
3. Message content, error control and recovery
4. Message flow
5. Message timing
6. Message control, including message sequencing, window control, and
7. Data transfer, including message sequencing, window control, and

8. Data transfer, including message sequencing, window control, and
9. Data transfer, including message sequencing, window control, and
10. Data transfer, including message sequencing, window control, and

11. Data transfer, including message sequencing, window control, and
12. Data transfer, including message sequencing, window control, and
13. Data transfer, including message sequencing, window control, and

14. Data transfer, including message sequencing, window control, and
15. Data transfer, including message sequencing, window control, and

Interfacial Protocol. This section shall be divided into the following paragraphs to describe the logical and physical design of the interface:

Interfacial Data and Control Signals (Interfacial)

Interfacial Control. This paragraph shall be divided

into paragraphs as needed to provide the following activities related to the interface:

1. Interface activation
2. Initialization of system that will use the

database including supersession
peripheral storage requirements,
2) Relationship to other databases,
3) Estimated internal and
including variations for different modes of
operation
4) Mapping of database components to one another
and to the files on which they will be recorded
5) Data communications environment in which the
database will be installed

b. Internal labeling conventions used in this
database design

c. Organization of the database and major design
considerations:

1) The conceptual model used for the database
2) Physical allocation, including for
each area/file: a) General
area/file design and format
b) Rationale for the design
c) Inter-area/file dependencies of the
area/file

d. Instructions to be followed by personnel who will
contribute to the generation of the database and who will use
it for testing and operational purposes, including, as
applicable:

1) Any special criteria for entering data into
the data-base
2) Source documents for the rules/procedures for
submitting data for entry
3) Source documents for the machine run
instructions for generating, modifying, updating, or otherwise
using the database

e. Support software available for handling the
database (such as database analysis/ sizing/loading/repairing
software), including name, functions, major
operating considerations, and documentation
references

f. Overview of security, privacy and criticality
considerations for the database

6.x.2 Database administrative information. This paragraph

1. The database design process is a systematic approach to the design of a database system. It involves the analysis of user requirements, the design of the database structure, and the implementation of the database system.

2. The database design process is a multi-step process. It begins with the analysis of user requirements, which involves identifying the data that is needed and the operations that must be performed on that data. This is followed by the design of the database structure, which involves determining the tables, fields, and relationships that will be used to store and retrieve the data. Finally, the database system is implemented, which involves creating the database and the programs that will be used to interact with it.

3. The database design process is a complex task that requires a deep understanding of database theory and practice. It is a task that is often undertaken by database designers, who are responsible for ensuring that the database system is designed to meet the needs of the users and that it is able to handle the data and operations that are required.

4. The database design process is a task that is often undertaken by database designers, who are responsible for ensuring that the database system is designed to meet the needs of the users and that it is able to handle the data and operations that are required.

5. The database design process is a task that is often undertaken by database designers, who are responsible for ensuring that the database system is designed to meet the needs of the users and that it is able to handle the data and operations that are required.

6. The database design process is a task that is often undertaken by database designers, who are responsible for ensuring that the database system is designed to meet the needs of the users and that it is able to handle the data and operations that are required.

7. The database design process is a task that is often undertaken by database designers, who are responsible for ensuring that the database system is designed to meet the needs of the users and that it is able to handle the data and operations that are required.

8. The database design process is a task that is often undertaken by database designers, who are responsible for ensuring that the database system is designed to meet the needs of the users and that it is able to handle the data and operations that are required.

9. The database design process is a task that is often undertaken by database designers, who are responsible for ensuring that the database system is designed to meet the needs of the users and that it is able to handle the data and operations that are required.

10. The database design process is a task that is often undertaken by database designers, who are responsible for ensuring that the database system is designed to meet the needs of the users and that it is able to handle the data and operations that are required.

shall be

divided into subparagraphs as needed to provide the information necessary to establish and administer the database in the described environment. It shall include, as applicable:

- a. Identification of the offices responsible for database administrative functions
- b. System information, including:
 - 1) The identification, vendor, version or release date, and targeted hardware of the Database Management System (DBMS) to be used
 - 2) Hardware configurations on which the database can reside
 - 3) Identification and document references for any DBMS utility software
 - 4) Use and management of integrity and access controls
- c. Schema information, including:
 - 1) Rationale for the chosen database structure
 - 2) Content of the database, listing its data elements and indicating within which subschemas of the database they are visible
 - 3) Description of schema and each subschema of the database, including name, file type and name, Data Description Language, access control keys, concurrence locking, data name mapping, overall area/file limitations and controls, restrictions due to redefinitions and access paths, and any other limitations or restrictions
 - 4) Logical organization of the data into records/tuples/sets/predefined relationships
 - 5) Physical structure (e.g., areas/files, indexes, pointers) and methods for achieving operating efficiency
 - 6) Sizing formulas for determining required storage
 - 7) Recovery methods for reestablishing schema and support files
 - 8) Cross-reference to applicable requirements
- d. Area/file information, including:
 - 1) Rationale for the chosen physical structure

- records it
- name, type,
- limiting factors
- necessary
- 2) Content of each area/file, listing the contains and their purposes
 - 3) Description of each area/file, including code, mapping, limitations and controls, access procedures/mechanisms, and training/testing capabilities
 - 4) Information about data storage and any regarding allocation, expansion, paging, loading, size
 - 5) Recovery methods for reconstructing the data and structure

6.x.3 Use of the database by (CSCI or system identification).
This

paragraph shall be divided into subparagraphs as needed to provide technical information needed by applications developers to use the database and its utilities in the development, maintenance, or enhancement of software. When more than one CSCI or system will use the database, additional paragraphs similar to this one shall be added. Each shall include, as applicable:

- a. Detailed technical descriptions of the database, including the name and purpose of each subschema or local view, and for each:

- subschema,
- predefined
- the
- and query
- controls for the
- 1) A list and description of each record in the including name, code, size, other needed attributes, and description of data elements in the record
 - 2) A list and description of each set or relation in the subschema
 - 3) A list and description of any areas/files of database, including name, code, type, allocation, expansion, load factor, database keys, and page size
 - 4) A list and description of each access routine path structure developed for this subschema or local view
 - 5) A description of security and privacy subschema

- b. Information about utility software to aid in

- database use
 - for this CSCI or system
- c. A description of any error handling routines and procedures available
- d. A list of all messages output to the CSCI during execution of database software

- 7. Notes. This section shall contain any general information that aids in understanding this document (e.g., background information, glossary, rationale). This section shall contain an alphabetical listing of all acronyms, abbreviations, and their meanings as used in this document, and a list of any terms and definitions needed to under[^]stand this document.
- 8. Appendixes. Appendixes may be used to provide information published separately for convenience in document maintenance (e.g., charts, classified data). As applicable, each appendix shall be referenced in the main body of the document where the data would normally have been provided.

6. A description of any error handling that has been and
is available
7. A list of all messages output in the TWT output
of Japanese software

8. This section shall contain any general
information
that aids in understanding this document, e.g.,
background information, theory, etc. This
section shall contain an alphabetical listing of all
acronyms, abbreviations, and their meanings as used in
this document, and a list of any terms and definitions
needed to understand this document.
9. Appendixes - Appendixes may be used to provide
information published separately for convenience, e.g.,
document references, etc. Each appendix shall be referenced in the
main body of the document where the data would normally
have been provided.

DOCUMENT: BLM 80029B

**SOFTWARE PRODUCT
SPECIFICATION
(SPS)**

DOCUMENT: BLM 80029B

SOFTWARE PRODUCT SPECIFICATION (SPS)

PURPOSE: The Software Product Specification (SPS) provides information needed to understand and support the software product.

CONTENTS: This document contains or references the Computer Software Configuration Items (CSCIs), the source code listings for the CSCI, the compilation/build procedures needed to convert the source code into executable code, information on the CSCI's resource utilization, and procedures required to modify the CSCI.

Upon Government approval, the design information and source code listings included in or referenced from the SPS establish the Product Baseline for the CSCI. They are also used to establish the Product Baseline for the system.

Paragraphs that have been tailored out of the DID shall result in the corresponding paragraph number and title in the document, followed by "This paragraph has been tailored out."

Document Structure:

1. Scope
 - 1.1 Identification
 - 1.2 System overview
 - 1.3 Document overview
2. Applicable documents
 - 2.1 Government documents
 - 2.2 Non-Government documents
3. Requirements
 - 3.1 Software design
 - 3.2 Source code listings
 - 3.3 Compilation/build procedures
 - 3.4 Measured resource utilization
 - 3.5 Modification procedures
4. Notes
5. Appendixes

SECRETARY'S REPORT

The Secretary's Report for the year 1900 is now ready for distribution and is being sent to the members of the Society.

This report contains a summary of the work of the Society during the year 1900, and is intended to give the members a general idea of the progress of the work. It also contains a list of the names of the members who have died during the year.

The Secretary's Report for the year 1900 is now ready for distribution and is being sent to the members of the Society.

The Secretary's Report for the year 1900 is now ready for distribution and is being sent to the members of the Society.

SECRETARY'S REPORT

1. General Report
2. Financial Report
3. Report on the Work of the Society
4. Report on the Work of the Society
5. Report on the Work of the Society
6. Report on the Work of the Society
7. Report on the Work of the Society
8. Report on the Work of the Society
9. Report on the Work of the Society
10. Report on the Work of the Society

1. Scope. This section shall be divided into the following paragraphs.
 - 1.1 Identification. This paragraph shall contain a full identification of the system and the CSCI to which this document applies, including, as applicable, identification number(s), title(s), abbreviation(s), version number(s), and release number(s).
 - 1.2 System overview. This paragraph shall briefly state the purpose of the system and the software to which this document applies. It shall describe the general nature of the system and software; summarize the history of system development, operation, and maintenance; identify the project sponsor, user, developer, and support agencies; identify current and planned operating sites; and list other relevant documents.
 - 1.3 Document overview. This paragraph shall summarize the purpose and contents of the document.
2. Applicable documents. This section shall be divided into the following paragraphs.
 - 2.1 Government documents. This paragraph shall contain a list of each Government documents reference within this document and shall be identified by Identification Number, Document Title, date of publication, and author (if known).
 - 2.2 Non-Government documents. This paragraph shall contain a list of each Non-Government documents reference within this document and shall be identified by Identification Number, Document Title, date of publication, and author (if known).
3. Requirements. This section shall be divided into the following paragraphs.
 - 3.1 Software design. This paragraph shall contain, or reference an appendix or other deliverable document that contains, information describing the design of the "as-built" (delivered) CSCI. The information shall be the same as that required in a Software Design Document (SDD), Interface Design Document (IDD), and Database Design Document (DBDD), as applicable. If these documents or their equivalents are to be delivered for the "as-built" CSCI, this paragraph shall reference them. If not, the information shall be provided in this document. Information provided in the headers, comments, and code of the source code listings may be referenced and need not be repeated in this section. If the SDD, IDD, or DBDD is included in an appendix,

1	Introduction
2	1.1 The purpose of this report
3	1.2 The scope of the report
4	1.3 The structure of the report
5	2. Theoretical background
6	2.1 Theoretical framework
7	2.2 Theoretical model
8	2.3 Theoretical hypotheses
9	3. Methodology
10	3.1 Research design
11	3.2 Data collection
12	3.3 Data analysis
13	4. Results
14	4.1 Descriptive statistics
15	4.2 Inferential statistics
16	4.3 Effect sizes
17	5. Discussion
18	5.1 Interpretation of findings
19	5.2 Implications for practice
20	5.3 Limitations and future research
21	6. Conclusion
22	References
23	Appendix A
24	Appendix B
25	Appendix C
26	Appendix D
27	Appendix E
28	Appendix F
29	Appendix G
30	Appendix H
31	Appendix I
32	Appendix J
33	Appendix K
34	Appendix L
35	Appendix M
36	Appendix N
37	Appendix O
38	Appendix P
39	Appendix Q
40	Appendix R
41	Appendix S
42	Appendix T
43	Appendix U
44	Appendix V
45	Appendix W
46	Appendix X
47	Appendix Y
48	Appendix Z
49	Appendix AA
50	Appendix AB
51	Appendix AC
52	Appendix AD
53	Appendix AE
54	Appendix AF
55	Appendix AG
56	Appendix AH
57	Appendix AI
58	Appendix AJ
59	Appendix AK
60	Appendix AL
61	Appendix AM
62	Appendix AN
63	Appendix AO
64	Appendix AP
65	Appendix AQ
66	Appendix AR
67	Appendix AS
68	Appendix AT
69	Appendix AU
70	Appendix AV
71	Appendix AW
72	Appendix AX
73	Appendix AY
74	Appendix AZ
75	Appendix BA
76	Appendix BB
77	Appendix BC
78	Appendix BD
79	Appendix BE
80	Appendix BF
81	Appendix BG
82	Appendix BH
83	Appendix BI
84	Appendix BJ
85	Appendix BK
86	Appendix BL
87	Appendix BM
88	Appendix BN
89	Appendix BO
90	Appendix BP
91	Appendix BQ
92	Appendix BR
93	Appendix BS
94	Appendix BT
95	Appendix BU
96	Appendix BV
97	Appendix BW
98	Appendix BX
99	Appendix BY
100	Appendix BZ

the paragraph numbers and page numbers need not be changed.

- 3.2 Source code listings. This paragraph shall contain, or reference an appendix that contains, the source code listings for the CSCI. This paragraph shall provide an index cross-referencing each software unit to the location of the listings where the code corresponding to that unit can be found and any comments useful in accessing or interpreting the listings.
- 3.3 Compilation/build procedures. This paragraph shall describe, or reference an appendix that describes, the compilation/build process used to create the executable software product from the source code. It shall specify the compiler(s)/assembler(s) used; other hardware and software needed; any settings/options/conventions used; and procedures for compiling/assembling, linking, and building the CSCI and the software system/subsystem containing the CSCI, including variations for different sites, configurations, versions, etc. Build procedures above the CSCI level may be presented in one SPS and referenced from the others.
- 3.4 Measured resource utilization. This paragraph shall specify the measured resource utilization of the CSCI at the time of delivery.
- 3.5 Modification procedures. This paragraph shall describe procedures that must be followed to modify the CSCI. It shall include or reference information on the following, as applicable:
 - a. Support facilities, equipment, and software, and procedures for their use
 - b. Databases/data banks used by the CSCI and procedures for using them
 - c. Design or coding conventions to be followed
 - d. Compilation/build procedures if different from those above
 - e. Integration and testing procedures to be followed
 - f. Error conditions, and procedures for responding to them
- 4. Notes. This section shall contain any general information that aids in understanding this

specification (e.g., background information, glossary, formula derivations). This section shall include an alphabetical listing of all acronyms, abbreviations, and their meanings as used in this document and a list of any terms and definitions needed to understand this document.

5. Appendixes. Appendixes may be used to provide information published separately for convenience in document maintenance (e.g., charts, classified data). As applicable, each appendix shall be referenced in the main body of the document where the data would normally have been provided.

DOCUMENT: BLM 80030B

SOFTWARE DEVELOPMENT PLAN (SDP)

INCIDENT: RL-180308

SOFTWARE DEVELOPMENT PLAN (SDP)

SOFTWARE DEVELOPMENT PLAN (SDP)

PURPOSE: The Software Development Plan (SDP) describes a contractor's plans for conducting a software development effort. The term "development" in this DID is meant to include creating new items, incorporating existing items, updating or refining existing items, or a combination of these approaches.

It is used to provide the Government insight into, and a tool for monitoring, the processes to be followed for software development, the methods to be used, the approach to be followed for each activity, the schedules for the project, and project organizations and resources.

CONTENTS: This Data Item Description (DID) contains the format and content to describe the Software Developer's plan to complete the software development project and doing so while remaining in compliance with the Bureau Standards for software development.

Alternate presentation styles. Charts, tables, matrices, and other presentations styles are acceptable substitutes for text when data required by this DID can be made more readable using these styles.

Paragraphs that have been tailored out of the DID shall result in the corresponding paragraph number and title in the document, followed by "This paragraph has been tailored out."

DOCUMENT STRUCTURE:

1. Scope
 - 1.1 Identification
 - 1.2 System overview
 - 1.3 Document overview
 - 1.4 Relationship to other plans
2. Referenced documents
3. Overview of the work to be done
4. Complying with 77-SDS-000102 general requirements
 - 4.1 Software development process
 - 4.2 General plans for software engineering.
 - 4.2.1 Software development methods
 - 4.2.2 Reusable software
 - 4.2.3 Safety analysis
 - 4.2.4 Processing resource and reserve capacity
 - 4.2.5 Recording rationale
 - 4.3 General plans for software testing
 - 4.3.1 Independence in testing activities
 - 4.3.2 Testing on target computer system
5. Complying with 77-SDS-000102 detailed requirements
 - 5.1 Project planning
 - 5.2 Establishing a software development environment

RECOMMENDATIONS

The following recommendations are made for the development of a system for monitoring and controlling the system. The system is to be developed in a modular fashion, with each module being developed and tested independently. The system is to be developed in a modular fashion, with each module being developed and tested independently. The system is to be developed in a modular fashion, with each module being developed and tested independently.

It is recommended that the system be developed in a modular fashion, with each module being developed and tested independently. The system is to be developed in a modular fashion, with each module being developed and tested independently. The system is to be developed in a modular fashion, with each module being developed and tested independently.

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REFERENCES

1. Introduction
2. System Overview
3. System Architecture
4. System Requirements
5. System Design
6. System Implementation
7. System Testing
8. System Deployment
9. System Maintenance
10. System Conclusion

- 5.3 System requirements analysis
- 5.5 Software requirements analysis
- 5.6 Software architectural design
- 5.7 Software detailed design
- 5.8 Coding and unit testing
- 5.9 Unit integration and testing
- 5.10 CSCI testing
- 5.11 CSCI integration and testing
- 5.12 System testing
- 5.13 Preparing for software use and support
- 5.14 Preparation for software delivery
- 5.15 Software product evaluations
- 5.16 Software configuration management
- 5.17 Corrective action and process improvement
- 5.18 Joint reviews
- 5.20 Other software development activities
- 6. Schedules
- 7. Project organization and resources
 - 7.1 Project organization
- 8. Notes
- 9. Appendixes

1. Scope. This section shall be divided into the following paragraphs.
 - 1.1 Identification. This paragraph shall contain a full identification of the system and the CSCIs to which this document applies, including, as applicable, identification number(s), title(s), abbreviation(s), version number(s), and release number(s).
 - 1.2 System overview. This paragraph shall briefly state the purpose of the system and the software to which this document applies. It shall describe the general nature of the system and software; summarize the history of system development, operation, and maintenance; identify the project sponsor, user, developer, and support agencies; identify current and planned operating sites; and list other relevant documents.
 - 1.3 Document overview. This paragraph shall summarize the purpose and contents of this document.
 - 1.4 Relationship to other plans. This paragraph shall describe the relationship, if any, of the SDP to related project management plans.
2. Referenced documents. This section shall list by document number and title all documents referenced in this plan. This section shall also identify the source for all documents not available through normal Government stocking activities.
3. Overview of the work to be done. This section shall be divided into paragraphs as needed to provide an overview of the work to be accomplished and to establish the context for the planning described in later sections. It shall include, as applicable, contractual and other requirements and constraints regarding:
 - a. The system and software to be developed
 - b. The documentation required
 - c. Overview of the system life cycle and the position of the project within that life cycle
 - d. The software life cycle model to be used
 - e. Project schedules and resources
 - f. Other aspects of the project, such as security, privacy, methods, standards to be followed, testing constraints, etc.

Complying with 77-SDS-000102 general requirements. This section shall be divided into the following paragraphs. Provisions

corresponding to non-required activities may be satisfied by the words "Not applicable." In addition to the content specified below, each paragraph shall identify applicable risks/uncertainties and plans for dealing with them.

- 4.1 Software development process. This paragraph shall describe the software development process to be used to develop the software. It shall include, as applicable:
 - a. A proposed life cycle model for the software if none is established in the contract, that is, a set of phases, builds, increments, blocks, or other project stages for the software, and the objectives of each. (Note: The remainder of this DID uses the term "build;" this term should be interpreted to suit the project)
 - b. A mapping of the activities required by 77-SDS-000102 (and other contract provisions) onto that portion of the software life cycle model covered by the contract, that is, identification of the activities to be performed in each build and, as applicable, their relationships to one another
- 4.2 General plans for software engineering.
 - 4.2.1 Software development methods. This paragraph shall describe the software development methods to be used. Included shall be descriptions of the manual and automated tools and procedures to be used in support of these methods. Reference may be made to other paragraphs in this plan if the methods are better described in context with the activities to which they will be applied.
 - 4.2.2 Reusable software. This paragraph shall describe the approach to be followed for identifying, evaluating, and incorporating reusable software into software required on this project. Candidate or selected reusable components known at the time this plan is prepared shall be identified and described, together with benefits and drawbacks, as applicable, for their use.
 - 4.2.3 Safety analysis. This paragraph shall describe the approach to be followed for ensuring that the requirements, design, code, and operating procedures minimize or eliminate the potential for hazardous conditions during the operational mission.
 - 4.2.4 Processing resource and reserve capacity. This paragraph shall describe the approach to be followed for analyzing, allocating, and monitoring the processing resource and reserve requirements established for the software.
 - 4.2.5 Recording rationale. This paragraph shall describe the approach to be followed for recording the rationale for key decisions made in specifying, designing, implementing, and testing the software.
- 3 General plans for software testing.

- 4.3.1 Independence in testing activities. This paragraph shall describe the approach to be followed for achieving the required level of independence in testing activities.
- 4.3.2 Testing on target computer system. This paragraph shall describe the approach to be followed for including testing on the target computer system or an equivalent system approved by the contracting agency as part of CSCI, CSCI integration, and system testing.
- 4.3.3 Stress testing. This paragraph shall describe the approach to be followed for stressing the software at the limits of its specified requirements as part of CSCI, CSCI integration, and system testing.
5. Complying with 77-SDS-000102 detailed requirements. This section shall be divided into the following paragraphs. Provisions corresponding to non-required activities may be satisfied by the words "Not applicable." The discussion of each activity shall include the approach (methods/procedures/tools) to be applied to
- 1) the analysis or other technical tasks involved,
 - 2) the recording of results, and
 - 3) the preparation of associated deliverables, if applicable. The discussion shall also identify applicable risks/uncertainties and plans for dealing with them. Reference may be made to 4.2.1 if applicable methods are described there.
- 5.1 Project planning. This paragraph shall describe the approach to be followed for developing project plans in each build. Included shall be the approach for:
- a. Further development of this software development plan
 - b. Planning CSCI and CSCI integration testing
 - c. Performing or participating in planning system testing
 - d. Planning for transition to software support
 - e. Planning for software installation and training at the user sites specified in the contract
- 5.2 Establishing a software development environment. This paragraph shall describe the approach to be followed for establishing, controlling, and maintaining a software development environment in each build. Included shall be descriptions of:
- a. The software engineering environment: its elements; Government rights to those elements; plans for establishing, testing, controlling, and maintaining the environment

1.1. The purpose of this document is to provide a clear and concise description of the system and its components. This document shall describe the system in detail, including the hardware, software, and data, and shall provide a clear and concise description of the system and its components.

1.2. The system shall be designed to provide a clear and concise description of the system and its components. This document shall describe the system in detail, including the hardware, software, and data, and shall provide a clear and concise description of the system and its components.

1.3. The system shall be designed to provide a clear and concise description of the system and its components. This document shall describe the system in detail, including the hardware, software, and data, and shall provide a clear and concise description of the system and its components.

1.4. The system shall be designed to provide a clear and concise description of the system and its components. This document shall describe the system in detail, including the hardware, software, and data, and shall provide a clear and concise description of the system and its components.

1.5. The system shall be designed to provide a clear and concise description of the system and its components. This document shall describe the system in detail, including the hardware, software, and data, and shall provide a clear and concise description of the system and its components.

1.6. The system shall be designed to provide a clear and concise description of the system and its components. This document shall describe the system in detail, including the hardware, software, and data, and shall provide a clear and concise description of the system and its components.

1.7. The system shall be designed to provide a clear and concise description of the system and its components. This document shall describe the system in detail, including the hardware, software, and data, and shall provide a clear and concise description of the system and its components.

1.8. The system shall be designed to provide a clear and concise description of the system and its components. This document shall describe the system in detail, including the hardware, software, and data, and shall provide a clear and concise description of the system and its components.

1.9. The system shall be designed to provide a clear and concise description of the system and its components. This document shall describe the system in detail, including the hardware, software, and data, and shall provide a clear and concise description of the system and its components.

- b. The software test environment: its elements; Government rights to those elements; plans for establishing, testing, controlling, and maintaining the environment (reference may be made to the Software Test Plan)
- c. The software development library: its elements, plans for establishing and maintaining the library, and planned access controls
- d. Software development files: their format, content, and plans for their creation and maintenance
- e. Design and coding standards to be used
- f. Non-deliverable software to be used
- g. Any other software standards and procedures to be used

5.3 System requirements analysis. This paragraph shall describe the approach to be followed for performing or participating in system requirements analysis in each build. Included shall be the approach for:

- a. Analyzing user input
- b. Defining the operational concept
- c. Defining the system requirements

5.4 System design. This paragraph shall describe the approach to be followed for performing or participating in system design analysis in each build. Included shall be the approach for:

- a. Developing the system behavioral design
- b. Developing the system architectural design

5.5 Software requirements analysis. This paragraph shall describe the approach to be followed for software requirements analysis in each build. Included shall be the approach for:

- a. Defining the CSCI engineering (and corresponding qualification) requirements
- b. Defining the CSCI interface (and corresponding qualification) requirements

5.6 Software architectural design. This paragraph shall describe the approach to be followed for performing software architectural design in each build. Included shall be the approach for:

- a. Developing the CSCI behavioral design
- b. Developing the CSCI architectural design
- c. Developing the database logical design

5.7 Software detailed design. This paragraph shall describe the approach to be followed for performing software detailed design

1. The software test environment: The software development team is responsible for creating the test environment. This includes the hardware, software, and network configuration. The test environment should be able to simulate the production environment as closely as possible.

2. The software development team: The software development team is responsible for creating the software. This includes the design, coding, and testing of the software. The team should be able to communicate effectively and work together to create a high-quality product.

3. Software development team: This team is responsible for the development of the software. They are responsible for the design, coding, and testing of the software. They should be able to communicate effectively and work together to create a high-quality product.

4. Design and coding standards: These standards are used to ensure that the software is developed in a consistent and high-quality manner. They should be clearly defined and followed by all team members.

5. Software development process: This process describes the steps that the software development team follows to create the software. It should be clearly defined and followed by all team members.

6. Software development team: This team is responsible for the development of the software. They are responsible for the design, coding, and testing of the software. They should be able to communicate effectively and work together to create a high-quality product.

7. Software development team: This team is responsible for the development of the software. They are responsible for the design, coding, and testing of the software. They should be able to communicate effectively and work together to create a high-quality product.

8. Software development team: This team is responsible for the development of the software. They are responsible for the design, coding, and testing of the software. They should be able to communicate effectively and work together to create a high-quality product.

9. Software development team: This team is responsible for the development of the software. They are responsible for the design, coding, and testing of the software. They should be able to communicate effectively and work together to create a high-quality product.

10. Software development team: This team is responsible for the development of the software. They are responsible for the design, coding, and testing of the software. They should be able to communicate effectively and work together to create a high-quality product.

11. Software development team: This team is responsible for the development of the software. They are responsible for the design, coding, and testing of the software. They should be able to communicate effectively and work together to create a high-quality product.

12. Software development team: This team is responsible for the development of the software. They are responsible for the design, coding, and testing of the software. They should be able to communicate effectively and work together to create a high-quality product.

13. Software development team: This team is responsible for the development of the software. They are responsible for the design, coding, and testing of the software. They should be able to communicate effectively and work together to create a high-quality product.

14. Software development team: This team is responsible for the development of the software. They are responsible for the design, coding, and testing of the software. They should be able to communicate effectively and work together to create a high-quality product.

15. Software development team: This team is responsible for the development of the software. They are responsible for the design, coding, and testing of the software. They should be able to communicate effectively and work together to create a high-quality product.

16. Software development team: This team is responsible for the development of the software. They are responsible for the design, coding, and testing of the software. They should be able to communicate effectively and work together to create a high-quality product.

in each build. Included shall be the approach for:

- a. Developing the CSCI detailed design
- b. Developing the CSCI interface design
- c. Developing the database physical design

5.8 Coding and unit testing. This paragraph shall describe the approach to be followed for coding and unit testing in each build, including the programming language(s) to be used. Included shall be the approach for:

- a. Coding software units
- b. Populating those databases to be populated as part of software development
- c. Preparing for unit testing
- d. Performing unit testing
- e. Revision and retesting based on test results
- f. Recording unit test results

5.9 Unit integration and testing. This paragraph shall describe the approach to be followed for unit integration and testing in each build. Included shall be the approach for:

- a. Preparing for unit integration and testing
- b. Performing unit integration and testing
- c. Revision and retesting based on test results
- d. Recording unit integration and test results

5.10 CSCI testing. This paragraph shall describe the approach to be followed for CSCI testing in each build. Included shall be the approach for:

- a. Preparing CSCI test cases
- b. Preparing CSCI test procedures
- c. Dry run of CSCI test procedures
- d. Performing CSCI testing (including Government witnessed testing, as applicable)
- e. Revision and retesting based on test results
- f. Analyzing and recording CSCI test results
- g. Updating CSCI test cases and procedures

5.11 CSCI integration and testing. This paragraph shall describe the approach to be followed for CSCI integration and testing in each build. Included shall be the approach for:

- a. Preparing CSCI integration and test cases

to each value. Included shall be the approach for:

- a. Developing the CMT test plan
- b. Developing the CMT test results
- c. Developing the test results report

Testing and test results. This paragraph shall describe the approach to be followed for testing and test results in each field, including the program, equipment to be used, and shall be the approach for:

- a. Coding software
- b. Integrating test results in the program as part of software development

Testing and test results

Testing and test results

Testing and test results

Testing and test results

Testing and test results. This paragraph shall describe the approach to be followed for testing and test results in each field. Included shall be the approach for:

Testing and test results

Testing and test results

Testing and test results

Testing and test results

Testing and test results. This paragraph shall describe the approach to be followed for CMT testing in each field. Included shall be the approach for:

- a. Preparing CMT test plan
- b. Preparing CMT test results
- c. Preparing CMT test results report
- d. Preparing CMT test results report
- e. Preparing and test results report
- f. Preparing and test results report

Testing and test results. This paragraph shall describe the approach to be followed for CMT testing and test results in each field. Included shall be the approach for:

Testing and test results

- b. Preparing CSCI integration and test procedures
- c. Dry run of CSCI integration and test procedures
- d. Performing CSCI integration and testing (including Government witnessed testing, as applicable)
- e. Revision and retesting based on test results
- f. Analyzing and recording CSCI integration and test results
- g. Updating CSCI integration and test cases and procedures

5.12 System testing. This paragraph shall describe the approach to be followed for performing or participating in system testing in each build. Included shall be the approach for:

- a. Preparing system test cases
- b. Preparing system test procedures
- c. Dry run of system test procedures
- d. Performing system testing (including Government witnessed testing, as applicable)
- e. Revision and retesting based on test results
- f. Analyzing and recording system test results
- g. Updating system test cases and procedures

5.13 Preparing for software use and support. This paragraph shall describe the approach to be followed for preparing for software use and support in each build. Included shall be the approach for:

- a. Developing software user manuals
- b. Developing computer center software operator manuals
- c. Developing software input/output manuals
- d. Developing computer system operator manuals
- e. Developing computer instruction set architecture manuals
- f. Developing firmware support manuals
- g. Performing installation and training at user sites
(reference may be made to the Software Installation Plan)
- h. Transitioning software and environments to the designated

- a. Proposing EDCI integration and test procedures
 - b. Key role of EDCI integration and test procedures
 - c. Performance and testing (including Government electronic testing, as applicable)
 - d. Analysis and testing based on test results
 - e. Analysis and testing based on test results
 - f. Testing EDCI integration and test results and procedures
- System testing. This paragraph shall be included in the system testing plan. The system testing plan shall be included in the system testing plan. The system testing plan shall be included in the system testing plan.

- a. Proposing system test cases
 - b. Proposing system test procedures
 - c. Key role of system test procedures
 - d. Performance and testing (including Government electronic testing, as applicable)
 - e. Analysis and testing based on test results
 - f. Analysis and testing based on test results
 - g. Testing system test cases and procedures
- Performance, reliability and security. This paragraph shall be included in the system testing plan. The system testing plan shall be included in the system testing plan. The system testing plan shall be included in the system testing plan.

- a. Developing system test cases
- b. Developing system test procedures
- c. Developing system test procedures
- d. Developing system test procedures
- e. Developing system test procedures
- f. Developing system test procedures
- g. Developing system test procedures
- h. Developing system test procedures

support site (reference may be made to the Software Support Plan)

5.14

Preparation for software delivery. This paragraph shall describe the approach to be followed for preparing for software delivery in each build. Included shall be the approach for:

- a. Preparing executable code for delivery
- b. Preparing source code for delivery
- c. Developing software product specifications
- d. Developing version descriptions
- e. Supporting Functional Configuration Audit(s)
- f. Supporting Physical Configuration Audit(s)

5.15

Software product evaluations. This paragraph shall describe the approach to be followed for performing software product evaluations of contractor and subcontractor products in each build. Included shall be the approach for:

- a. Performing in-process software product evaluations, including items to be evaluated, sampling methods for software development files, and any proposed alternatives or additions to the criteria and definitions in 77-SDS-000102
- b. Performing final software product evaluations, including items to be evaluated and any proposed alternatives or additions to the criteria and definitions in 77-SDS-000102
- c. Achieving the required independence in software product evaluation activities
- d. Preparing and maintaining software product evaluation records, including items to be recorded

5.16

Software configuration management. This paragraph shall describe the approach to be followed for performing software configuration management in each build. Included shall be the approach for:

- a. Controlling development products, including:
 - 1) Configuration identification of development products
 - 2) Configuration control of development products, including, as applicable:
 - a) The levels of control each product must pass through
 - b) Persons/groups who can authorize and make changes

Support will be provided to the following support

... This paragraph shall describe the approach to be followed for preparing the software delivery in each build. Included shall be the approach for

1. Identifying system configuration
2. Identifying system configuration
3. Identifying system configuration
4. Identifying system configuration
5. Identifying system configuration
6. Identifying system configuration
7. Identifying system configuration
8. Identifying system configuration
9. Identifying system configuration
10. Identifying system configuration

... This paragraph shall describe the approach to be followed for preparing the software delivery in each build. Included shall be the approach for

1. Identifying system configuration
2. Identifying system configuration
3. Identifying system configuration
4. Identifying system configuration
5. Identifying system configuration
6. Identifying system configuration
7. Identifying system configuration
8. Identifying system configuration
9. Identifying system configuration
10. Identifying system configuration

... This paragraph shall describe the approach to be followed for preparing the software delivery in each build. Included shall be the approach for

1. Identifying system configuration
2. Identifying system configuration
3. Identifying system configuration
4. Identifying system configuration
5. Identifying system configuration
6. Identifying system configuration
7. Identifying system configuration
8. Identifying system configuration
9. Identifying system configuration
10. Identifying system configuration

... This paragraph shall describe the approach to be followed for preparing the software delivery in each build. Included shall be the approach for

at each level

- c) Procedures for requesting authorization, processing each request, tracking changes, and maintaining past versions
- b. Interface with Government Configuration Management, including:
 - 1) Using Engineering Change Proposals
 - 2) Configuration status accounting, including the format, content, and purpose of reports to be used
- c. Storage, handling, and delivery of project media

5.17 Corrective action and process improvement. This paragraph shall describe the approach to be followed for performing corrective action and process improvement in each build. Included shall be the approach for:

- a. Preparing problem/change reports, including the items to be included in each report (candidate items include project name, originator, problem number, problem name, software element or document affected, origination date, category and priority, description, analyst assigned to the problem, date assigned, date completed, analysis time, recommended solution, impacts, problem status, approval of solution, follow-up actions, corrector, correction date, version where corrected, correction time, description of solution implemented)
- b. Implementing a corrective action and process improvement system

5.18 Joint reviews. This paragraph shall describe the approach to be followed for holding joint (customer/contractor) reviews in each build. Included shall be:

- a. A proposed set of technical-level reviews, including the items to be reviewed, objectives to be achieved, and preparatory and follow-up activities for each review
- b. A proposed set of management-level reviews, including the items to be reviewed, objectives to be achieved, and preparatory and follow-up activities for each review

5.19 Software development management. This paragraph shall describe the approach to be followed for performing software development management in each build. Included shall be the approach for:

- a. Risk management, including a discussion of the technical, cost, and schedule risks identified for the project and plans for dealing with them (if all applicable risks have

at each level

Procedures for review of information
providing the project, checking changes and
maintaining good records

Information with Government Organization
Management including

Being interested in the project
1) Confidential status or working conditions
the project, status, and progress of reports
to be used

Strategy, handling, and delivery of project results

Information and the project organization. The project shall
be organized in a way that the project is carried out
in a way that is efficient and effective. The project shall be
organized in a way that is efficient and effective.

Information and the project organization. The project shall
be organized in a way that the project is carried out
in a way that is efficient and effective. The project shall be
organized in a way that is efficient and effective.

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organized in a way that is efficient and effective.

Information and the project organization. The project shall
be organized in a way that the project is carried out
in a way that is efficient and effective. The project shall be
organized in a way that is efficient and effective.

been covered in the activity planning, this paragraph may so state.)

- b. Complying with the security and privacy requirements in the contract
- c. Managing subcontractors
- d. Interfacing with software IV&V agents
- e. Coordinating software development efforts to ensure compatibility at interfaces with associate contractors
- f. Applying management indicators, including the indicators to be used, the data to be collected, the methods to be used to interpret and apply the data, and the reporting mechanism to be used

5.20 Other software development activities. This paragraph shall describe the approach to be followed for performing any other software development activities in each build.

6. Schedules. This section shall present the schedule(s) for the project. It shall include:

- a. Schedule(s) identifying the activities in each build and showing initiation of each activity, availability of draft and final deliverables and other milestones, and completion of each activity
- b. An activity network, depicting sequential relationships and dependencies among activities and identifying those activities that impose the greatest time restrictions on the project

7. Project organization and resources. This section shall be divided into the following paragraphs to describe the project organization and resources to be applied in each build.

7.1 Project organization. This paragraph shall describe the organizational structure to be used on the project, including the organizations involved, their relationships to one another, and the authority and responsibility of each organization for carrying out required activities.

7.2 Project resources. This paragraphs shall describe the resources to be applied to the project. It shall include, as applicable:

- a. Personnel resources, including:
 - 1) The estimated staff-loading for the project (number of personnel over time)

been covered in the activity planning. This paragraph may be
added.

Consistency with the necessity and policy requirements in the
contract

Consistency with the necessity and policy requirements

Consistency with the necessity and policy requirements

Consistency with the necessity and policy requirements

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Consistency with the necessity and policy requirements

Consistency with the necessity and policy requirements

- 2) The breakdown of the staff-loading numbers by responsibility (for example, management, software engineering, software testing, software configuration management, software product evaluation)
- 3) An overview of the skill levels, geographic locations, and security clearances of personnel performing each responsibility

- b. Overview of contractor facilities to be used, including geographic locations in which the work will be performed, facilities to be used, and secure areas and other features of the facilities as applicable to the contracted effort.
- c. Government furnished equipment, software, services, documentation, data, and facilities required for the contracted effort. A schedule detailing when these items will be needed shall also be included.
- d. Other required resources, including a plan for obtaining the resources, dated needed, and availability of each resource item.

8. Notes. This section shall contain any general information that aids in understanding this document. This section shall include an alphabetical listing of all acronyms, abbreviations, and their meanings as used in this document and a list of any terms and definitions needed to understand this document.

9. Appendixes. Appendixes may be used to provide information published separately for convenience in document maintenance (e.g., charts, classified data). As applicable, each appendix shall be referenced in the main body of the document where the data would normally have been provided.

1) The President of the staff-level management is responsible for the management, organization, and control of the staff-level management, including the management, organization, and control of the staff-level management.

2) An overview of the staff-level management, including the management, organization, and control of the staff-level management, is provided in the following sections.

3) Overview of the staff-level management, including the management, organization, and control of the staff-level management, is provided in the following sections.

4) Overview of the staff-level management, including the management, organization, and control of the staff-level management, is provided in the following sections.

5) Overview of the staff-level management, including the management, organization, and control of the staff-level management, is provided in the following sections.

6) Overview of the staff-level management, including the management, organization, and control of the staff-level management, is provided in the following sections.

7) Overview of the staff-level management, including the management, organization, and control of the staff-level management, is provided in the following sections.

DOCUMENT NO: BLM C-80030B

CONSOLIDATED SOFTWARE PLAN (C-SP)

Alternate For:

Software Development Plan	- BLM 80030B
Software Support Plan	- BLM 80033B
Software Installation Plan	- BLM 80032B

DOCUMENT NO: BJA C-80008

CONSOLIDATED SOFTWARE PLAN (C-SP)

REVISIONS

Revision	Description	By	Date
1.0	Initial Development Plan	WJM	10/1/88
2.0	Software System Plan	WJM	10/1/88
3.0	Software Development Plan	WJM	10/1/88

CONSOLIDATED SOFTWARE PLAN (C-SP)

PURPOSE: The Consolidated Software Plan (C-SP) is a single document encompassing the planning for software development, software installation, and preparation for transition to software support.

CONTENTS: It contains, in summary form, the contents of the Software Development Plan (SDP), Software Installation Plan (SIP), and Software Support Plan (SSP).

A C-SP is written as an alternative to the individual planning documents cited above. It is best suited to a project on which a single planning document is most effective.

Paragraphs that have been tailored out of the DID shall result in the corresponding paragraph number and title in the document, followed by "This paragraph has been tailored out."

Document Structure:

1. Scope
 - 1.1 Identification
 - 1.2 System overview
 - 1.3 Document overview
2. Referenced documents
3. Software development planning
 - 3.1 Overview of the work to be done
 - 3.2 Complying with 77-SDD-000102 general requirements
 - 3.3 Complying with 77-SDD-000102 detailed requirements
 - 3.4. Schedules
 - 3.5. Project organization and resources
4. Software installation planning
 - 4.1 Installation overview
 - 4.2 Site information for computer operations personnel
 - 4.2.x (Site Name).
 - 4.3. Site information for user personnel
 - 4.3.x (Site Name)
5. Software support planning
 - 5.1 Software support resources
 - 5.2 Recommended procedures
 - 5.3 Training
 - 5.4 Anticipated areas of change
 - 5.5 Transition planning
6. Notes
7. Appendixes

1. Scope. This section shall be divided into the following paragraphs:
 - 1.1 Identification. This paragraph shall contain a full identification of the system and the CSCIs to which this document applies, including, as applicable, identification number(s), title(s), abbreviation(s), version number(s), and release number(s).
 - 1.2 System overview. This paragraph shall briefly state the purpose of the system and the software to which this document applies. It shall describe the general nature of the system and software; summarize the history of system development, operation, and maintenance; identify the project sponsor, user, developer, and support agencies; identify current and planned operating sites; and list other relevant documents.
 - 1.3 Document overview. This paragraph shall summarize the purpose and contents of this document.
2. Referenced documents. This section shall list by document number and title all documents referenced in this document. This section shall also identify the source for all documents not available through normal Government stocking activities.
3. Software development planning. This section shall be divided into the following paragraphs to describe the contractor's plans for conducting the software development effort.
 - 3.1 Overview of the work to be done. This paragraph shall be divided into subparagraphs as needed to provide an overview of the work to be accomplished and to establish the context for the planning described in later sections. It shall include, as applicable, contractual and other requirements and constraints regarding:
 - a. The system and software to be developed
 - b. The documentation required
 - c. Overview of the system life cycle and the position of the project within that life cycle
 - d. The software life cycle model to be used
 - e. Project schedules and resources
 - f. Other aspects of the project, such as security, privacy, methods, standards to be followed, testing constraints, etc.
 - 3.2 Complying with 77-SDD-000102 general requirements. This paragraph shall be divided into subparagraphs as needed to provide the following information. Provisions corresponding to non-required activities may be satisfied by the words "Not applicable." Each subparagraph shall identify applicable risks/uncertainties and plans for dealing with them.
 - a. The software development process to be used, including:
 - 1) A proposed life cycle model for the software if none is

established in the contract, that is, a set of phases, builds, increments, blocks, or other project stages, and the objectives of each. (Note: The remainder of this DID uses the term "build;" this term should be interpreted to suit the project)

- 2) A mapping of the activities required by MIL-STD-SDD (and other contract provisions) onto that portion of the software life cycle model covered by the contract, that is, identification of the activities to be performed in each build and, as applicable, their relationships to one another

b. General plans for software engineering, including:

- 1) The software development methods to be used, including the tools and procedures to be used in support of these methods
- 2) The approach to be followed for identifying, evaluating, and incorporating reusable software, including identification of any candidate or selected reusable components known at the time this plan is prepared
- 3) The approach to be followed for safety analysis
- 4) The approach to be followed for analyzing, allocating, and monitoring the processing resource and reserve requirements established for the software
- 5) The approach to be followed for recording the rationale for key decisions

c. General plans for software testing, including the approach to be followed for:

- 1) Achieving the required level of independence
- 2) Including testing on the target computer system or an equivalent system
- 3) Stressing the software at the limits of its specified requirements

3.3

Complying with 77-SDD-000102 detailed requirements. This paragraph shall be divided into the subparagraphs as needed to provide the following information. Provisions corresponding to non-required activities may be satisfied by the words "Not applicable." The discussion of each activity shall include the approach (methods/procedures/tools) to be applied to 1) the analysis or other technical tasks involved, 2) the recording of results, and 3) the preparation of associated deliverables, if applicable. The discussion shall also identify applicable risks/uncertainties and plans for dealing with them.

- a. The approach to be followed for developing project plans in each build, including:
 - 1) Further development of this software development plan
 - 2) Planning CSCI and CSCI integration testing
 - 3) Performing or participating in planning system testing
 - 4) Planning for transition to software support
 - 5) Planning for software installation and training at user sites
- b. The approach to be followed for establishing, controlling, and maintaining a software development environment in each build, including descriptions of:
 - 1) The software engineering environment
 - 2) The software test environment
 - 3) The software development library
 - 4) The software development files
 - 5) Design and coding standards to be used
 - 6) Non-deliverable software to be used
 - 7) Any other software standards and procedures to be used
- c. The approach to be followed for performing or participating in system requirements analysis in each build, including:
 - 1) Analyzing user input
 - 2) Defining the operational concept
 - 3) Defining the system requirements
- d. The approach to be followed for performing or participating in system design analysis in each build, including:
 - 1) Developing the system behavioral design
 - 2) Developing the system architectural design
- e. The approach to be followed for software requirements analysis in each build, including:
 - 1) Defining the CSCI engineering (and corresponding qualification) requirements
 - 2) Defining the CSCI interface (and corresponding qualification) requirements
- f. The approach to be followed for performing software architectural design in each build, including:
 - 1) Developing the CSCI behavioral design
 - 2) Developing the CSCI architectural design
 - 3) Developing the database logical design
- g. The approach to be followed for performing software detailed design in each build, including:
 - 1) Developing the CSCI detailed design

The approach to be followed for developing project plans is each build, including:

- 1) Further development of the software development plan
- 2) Planning CSU and DSU development testing
- 3) Performing the development testing in phases and testing
- 4) Planning for installation and testing of new
- 5) Planning for software installation and testing of new

The approach to be followed for establishing, controlling, and maintaining a software development environment is each build, including descriptions of:

- 1) The software engineering environment
- 2) The software test environment
- 3) The software development library
- 4) The software development files
- 5) Design and coding standards to be used
- 6) How software is to be used
- 7) How other software standards and procedures to be used

The approach to be followed for performing on going testing in system development systems is each build, including:

- 1) Analyzing user needs
- 2) Defining the operational concept
- 3) Defining the system requirements

The approach to be followed for performing as participating in system design studies is each build, including:

- 1) Developing the system technical design
- 2) Developing the system architectural design

The approach to be followed for software requirements analysis is each build, including:

- 1) Defining the CSU engineering and development
- 2) Defining the DSU engineering and development
- 3) Defining the CSU interface and development
- 4) Defining the DSU interface and development

The approach to be followed for software analysis is each build, including:

- 1) Developing the CSU technical design
- 2) Developing the DSU technical design
- 3) Developing the software logical design

The approach to be followed for performing software design is each build, including:

- 1) Developing the CSU detailed design

- 2) Developing the CSCI interface design
 - 3) Developing the database physical design
- h. The approach to be followed for coding and unit testing in each build, including the programming language(s) to be used, including:
- 1) Coding software units
 - 2) Populating those databases to be populated as part of software development
 - 3) Preparing for unit testing
 - 4) Performing unit testing
 - 5) Revision and retesting based on test results
 - 6) Recording unit test results
- i. The approach to be followed for unit integration and testing in each build, including:
- 1) Preparing for unit integration and testing
 - 2) Performing unit integration and testing
 - 3) Revision and retesting based on test results
 - 4) Recording unit integration and test results
- j. The approach to be followed for CSCI testing in each build, including:
- 1) Preparing CSCI test cases
 - 2) Preparing CSCI test procedures
 - 3) Dry run of CSCI test procedures
 - 4) Performing CSCI testing (including Government witnessed testing, as applicable)
 - 5) Revision and retesting based on test results
 - 6) Analyzing and recording CSCI test results
 - 7) Updating CSCI test cases and procedures
- k. The approach to be followed for CSCI integration and testing in each build, including:
- 1) Preparing CSCI integration and test cases
 - 2) Preparing CSCI integration and test procedures
 - 3) Dry run of CSCI integration and test procedures
 - 4) Performing CSCI integration and testing (including Government witnessed testing, as applicable)
 - 5) Revision and retesting based on test results
 - 6) Analyzing and recording CSCI integration and test results
 - 7) Updating CSCI integration and test cases and procedures
- l. The approach to be followed for performing or participating in system testing in each build, including:
- 1) Preparing system test cases
 - 2) Preparing system test procedures
 - 3) Dry run of system test procedures

- 2) Developing the database physical design
- 3) Developing the DBMS interface design

The approach to be followed for coding and testing is each build, including the programming language(s) to be used, including:

- 1) Coding and testing units
- 2) Subprogram design documents to be prepared as part of software development
- 3) Preparation for unit testing
- 4) Testing and testing plan
- 5) Testing and testing plan as part of testing
- 6) Testing and testing plan as part of testing

The approach to be followed for unit integration and testing is each build, including:

- 1) Preparation for unit integration and testing
- 2) Testing and testing plan as part of testing
- 3) Testing and testing plan as part of testing
- 4) Testing and testing plan as part of testing

The approach to be followed for the system as a whole, including:

- 1) Preparation for system testing
- 2) Preparation for system testing
- 3) Preparation for system testing
- 4) Preparation for system testing
- 5) Preparation for system testing
- 6) Preparation for system testing
- 7) Preparation for system testing

The approach to be followed for the system as a whole, including:

- 1) Preparation for system testing
- 2) Preparation for system testing
- 3) Preparation for system testing
- 4) Preparation for system testing
- 5) Preparation for system testing
- 6) Preparation for system testing
- 7) Preparation for system testing

The approach to be followed for the system as a whole, including:

- 1) Preparation for system testing
- 2) Preparation for system testing
- 3) Preparation for system testing
- 4) Preparation for system testing
- 5) Preparation for system testing
- 6) Preparation for system testing
- 7) Preparation for system testing

- 4) Performing system testing (including Government witnessed testing, as applicable)
 - 5) Revision and retesting based on test results
 - 6) Analyzing and recording system test results
 - 7) Updating system test cases and procedures
- m. The approach to be followed for preparing for software use and support in each build, including:
- 1) Developing software user manuals
 - 2) Developing computer center software operator manuals
 - 3) Developing software input/output manuals
 - 4) Developing computer system operator manuals
 - 5) Developing computer instruction set architecture manuals
 - 6) Developing firmware support manuals
 - 7) Performing installation and training at user sites
 - 8) Transitioning software and environments to the designated support site
- n. The approach to be followed for preparing for software delivery in each build, including:
- 1) Preparing executable code for delivery
 - 2) Preparing source code for delivery
 - 3) Developing software product specifications
 - 4) Developing version descriptions
 - 5) Supporting Functional Configuration Audit(s)
 - 6) Supporting Physical Configuration Audit(s)
- o. The approach to be followed for performing software product evaluations of contractor and subcontractor products in each build, including:
- 1) Performing in-process software product evaluations
 - 2) Performing final software product evaluations
 - 3) Achieving the required independence in software product evaluation activities
 - 4) Preparing and maintaining software product evaluation records, including items to be recorded
- p. The approach to be followed for performing software configuration management in each build, including:
- 1) Controlling development products, including:
 - a) Configuration identification of development products
 - b) Configuration control of development products
 - 2) Interface with Government Configuration Management, including:
 - a) Supporting the baselining of specifications
 - b) Using Engineering Change Proposals
 - c) Configuration status accounting, including the

- 1) Developing system testing (including development)
- 2) Developing testing the application
- 3) Analysis and reviewing based on test results
- 4) Analyzing and reviewing system test results
- 5) Updating system test cases and procedures

The approach to be followed for preparing the software test and support is given below, including:

- 1) Developing software test cases
- 2) Developing software test cases (including test cases)
- 3) Developing software test cases (including test cases)
- 4) Developing software test cases (including test cases)
- 5) Developing software test cases (including test cases)
- 6) Developing software test cases (including test cases)
- 7) Developing software test cases (including test cases)
- 8) Developing software test cases (including test cases)

The approach to be followed for preparing the software test and support is given below, including:

- 1) Developing software test cases for delivery
- 2) Developing software test cases for delivery
- 3) Developing software test cases for delivery
- 4) Developing software test cases for delivery
- 5) Developing software test cases for delivery
- 6) Developing software test cases for delivery

The approach to be followed for preparing the software test and support is given below, including:

- 1) Developing software test cases (including test cases)
- 2) Developing software test cases (including test cases)
- 3) Developing software test cases (including test cases)
- 4) Developing software test cases (including test cases)
- 5) Developing software test cases (including test cases)
- 6) Developing software test cases (including test cases)

The approach to be followed for preparing the software test and support is given below, including:

- 1) Developing software test cases (including test cases)
- 2) Developing software test cases (including test cases)
- 3) Developing software test cases (including test cases)
- 4) Developing software test cases (including test cases)
- 5) Developing software test cases (including test cases)
- 6) Developing software test cases (including test cases)

The approach to be followed for preparing the software test and support is given below, including:

- 1) Developing software test cases (including test cases)
- 2) Developing software test cases (including test cases)
- 3) Developing software test cases (including test cases)
- 4) Developing software test cases (including test cases)
- 5) Developing software test cases (including test cases)
- 6) Developing software test cases (including test cases)

format, content, and purpose of reports to be used

- 3) Storage, handling, and delivery of project media
- q. The approach to be followed for performing corrective action and process improvement in each build, including:
 - 1) Preparing problem/change reports, including the items to be included
 - 2) Implementing a corrective action and process improvement system
- r. The approach to be followed for holding joint (customer/contractor) reviews in each build, including:
 - 1) A proposed set of technical-level reviews, including the items to be reviewed, objectives, and preparatory and follow-up activities for each review
 - 2) A proposed set of management-level reviews, including the items to be reviewed, objectives, and preparatory and follow-up activities for each review
- s. The approach to be followed for performing software development management in each build, including:
 - 1) Risk management
 - 2) Complying with the security and privacy requirements in the contract
 - 3) Managing subcontractors
 - 4) Interfacing with software IV&V agents
 - 5) Coordinating software development efforts to ensure compatibility at interfaces with associate contractors
 - 6) Applying management indicators, including indicators to be used, data to be collected, methods for interpreting/applying the data, and reporting mechanisms
- t. The approach to be followed for performing any other software development activities in each build

3.4. Schedules. This paragraph shall present the schedule(s) for the project. It shall include:

- a. Schedule(s) identifying the activities in each build and showing initiation of each activity, availability of draft and final deliverables and other milestones, and completion of each activity
- b. An activity network, depicting sequential relationships and dependencies among activities and identifying those activities that impose the greatest time restrictions on the project

format, content, and purpose of reports to be used

3. Reports, handling, and delivery of project results

4. The approach to be followed for performing project activities and processes, including in each build, including:

5. Identifying milestones, including the time to be included

6. Implementing a consistent set of processes throughout project

7. The approach to be followed for handling risks, including identifying/controlling risks in each build, including:

8. A plan for the technical-level review, including the time to be reviewed, objectives, and frequency and follow-up activities for each review

9. A plan for the management-level review, including the time to be reviewed, objectives, and frequency and follow-up activities for each review

10. The approach to be followed for performing software development activities in each build, including:

11. Risk management

12. Identifying and the security and privacy requirements in the project

13. Managing subcontractors

14. Identifying and the security and privacy requirements in the project

15. Identifying and the security and privacy requirements in the project

16. Identifying and the security and privacy requirements in the project

17. The approach to be followed for performing any other software development activities in each build

18. Deliverables. This category shall present the deliverables for the project. It shall include:

19. Deliverables. Identifying the activities in each build and showing activities in each activity, including the time to be reviewed, objectives, and frequency and follow-up activities for each review

20. An activity matrix. Detailed sequential relationships and dependencies among activities and identifying those activities that require the greatest time allocation in the project

3.5. Project organization and resources. This paragraph shall be divided into subparagraphs as needed to describe:

- a. The organizational structure to be used on the project, including the organizations involved, their relationships to one another, and the authority and responsibility of each organization for carrying out required activities
- b. The resources to be applied to the project, including:
 - 1) Personnel resources:
 - a) Estimated staff-loading (number of personnel over time)
 - b) Breakdown of the staff-loading numbers by responsibility
 - c) Overview of the skill levels, geographic locations, and security clearances
 - 2) Overview of contractor facilities to be used
 - 3) Government furnished items facilities required and dates needed
 - 4) Other required resources, plan for obtaining them, and need/availability dates

4. Software installation planning. This section shall be divided into the following paragraphs to describe the contractor's plans for installing the software at user sites.

4.1 Installation overview. This paragraph shall be divided into subparagraphs as needed to provide the following information:

- a. A general description of the installation process, including list of sites and installation schedule
- b. The organizational name, office symbol/code, and telephone number of a contact for questions relating to installation
- c. A list of support materials required for the installation, including magnetic tapes, disk packs, computer printer paper, and special forms
- d. A description of the briefings, seminars, and training to be provided
- e. A list and brief description of each task required for the system installation, including responsible organization
- f. A description of the number and skill level of the personnel required during the installation period and the days and times they will be needed, including the need for multishift operation, clerical support, etc.
- g. An overview of security considerations associated with the system

Project organization and management. This paragraph shall be divided into subparagraphs as needed to describe:

a. The organizational structure to be used on the project, including the organizational chart, lines of authority, and the authority and responsibility of each organization for carrying out required activities.

b. The resources to be applied to the project, including:

- 1) Personnel resources.
- 2) Estimated effort in terms of number of personnel over time.
- 3) Schedule of the effort in terms of milestones.
- 4) Location of the effort in terms of geographic area.
- 5) Location and security clearance.

- 6) Overview of the project facilities to be used.
- 7) Government facilities to be used or to be constructed.
- 8) Other facilities to be used, such as existing road, and other facilities.

Facilities and services. This section shall be divided into the following paragraphs to describe the project's plan for installing the system at each site:

Installation details. This paragraph shall be divided into subparagraphs as needed to provide the following information:

a. A general description of the installation process, including a list of sites and installation schedule.

b. The organizational chart, with symbols, and a description of a contract for services relating to installation.

c. A list of support facilities required for the installation, including services such as food, lodging, medical, and security forces.

d. A description of the existing facilities, and existing to be provided.

e. A list and brief description of any new facilities to be constructed, including responsible organization.

f. A description of the number and skill level of the personnel required during the installation period and the type and extent of training, including the need for technical, operational, medical support, etc.

g. An overview of security considerations associated with the system.

- 4.2 Site information for computer operations personnel. This paragraph applies if the system will be installed in computer center(s) for users to access via terminals or using batch inputs/ outputs. If this type of installation does not apply, this paragraph shall contain the words "Not applicable."
- 4.2.x (Site Name). This paragraph shall identify a site or set of sites and provide the following information for those sites.
- a. Schedule of activities to be accomplished during installation
 - b. Inventory of software required to support the installation, including name, identification code or acronym, security classification, and whether the software is expected to be on site or will be delivered for the installation
 - c. Physical facilities and accommodations required during the installation period, including classroom, work space, training aids, hardware, transportation, and lodging, and the days and times they will be needed
 - d. Composition of the installation team, and each member's tasks
 - e. Step-by-step procedures for accomplishing the installation and conversion from the old system
 - f. Data update procedures during the installation period, if different from normal, including step-by-step procedures for updating the converted data
- 4.3. Site information for user personnel. This section shall provide users with the information necessary to accomplish an orderly installation. If more than one type of user is involved, separate information shall be provided for each, as applicable.
- 4.3.x (Site Name). This paragraphs shall identify a site or set of sites and shall provide the following information for those sites:
- a. Schedule of activities to be accomplished by the user during installation
 - b. Step-by-step procedures for accomplishing the installation and conversion
 - c. The user's data update procedures during the installation period, if different from normal, including step-by-step procedures for updating the converted data
5. Software support planning. This section shall be divided into the following paragraphs to describe the contractor's plans for transitioning the software to the support agency.
1. Software support resources. This paragraph shall be divided into subparagraphs as needed to identify and describe the components

of the software engineering and test environments required to support the deliverable software (including modify, document, test, copy, distribute, and control). Items to be described shall include the following, as applicable:

- a. Facilities: buildings or building features required for support; mock-ups; power requirements; security and safety measures
- b. Hardware: computer and other equipment required for support, including specific model numbers, acceptable alternatives, rationale for including, status of each item (Government-furnished, deliverable, already owned by support agency, must be acquired), information about where to acquire, known limitations, reference to user/operator manuals or instructions
- c. Software: software and associated documentation require for support, including titles, version numbers, acceptable alternatives, rationale for including, status of each item (Government-furnished, deliverable, already owned by support agency, must be acquired), information about where to acquire, known limitations, reference to user/operator manuals or instructions
- d. Other documentation needed for support, including titles, numbers, versions; acceptable alternatives, rationale for including, status of each document (Government-furnished, deliverable, already owned by support agency, must be acquired), information about where to acquire, known limitations
- e. Personnel needed to support the deliverable software, including number of personnel, types and levels of skills and expertise, and security clearances. This paragraph shall cite, as applicable, actual staffing on the development project, as applicable to estimate how to staff the support effort
- f. Other resources required for support, including consumable such as magnetic tapes, together with an estimate of the type and number that should be acquired
- g. The interrelationship of the components identified in the preceding paragraphs

5.2

Recommended procedures. This paragraph shall be describe procedures that the contractor may wish to recommend to the support agency for supporting the deliverable software. Included may be procedures for software support management, software engineering, software testing, software product evaluations, software configuration management, or other activities.

5.3 Training. This paragraph shall describe the contractor's plans for training personnel to manage and implement support of the deliverable software. The schedule and location for all required training shall be provided, as well as the delineation between classroom training and "hands-on" training. This paragraph shall provide (either directly or by reference) provisions for familiarization with the operational software and target computer(s), the support software and host system, and equipment maintenance procedures, as applicable.

5.4 Anticipated areas of change. This paragraph shall describe the anticipated areas of change to the deliverable software.

5.5 Transition planning. This paragraph shall be divided into subparagraphs as needed to describe the contractor's plans for transitioning the deliverable software to the support agency. Included shall be descriptions of:

- a. All activities to be performed to transition the deliverable software to support
- b. Roles and responsibilities for each activity
- c. The resources required and the source of each resource
- d. Schedules and milestones for transition activities
- e. Procedures for installation and checkout of the deliverable software in the support environment designated by the contracting agency

Notes. This section shall contain any general information that aids in understanding this document (e.g., background information, glossary). This section shall include an alphabetical listing of all acronyms, abbreviations, and their meanings as used in this document and a list of any terms and definitions needed to understand this document.

A. Appendixes. Appendixes may be used to provide information published separately for convenience in document maintenance (e.g., charts, classified data). As applicable, each appendix shall be referenced in the main body of the document where the data would normally have been provided.

1. This paragraph shall describe the contractor's plan for certain personnel to receive and implement support of the delivery system. The schedule and location for all required training shall be provided as well as the relationship between classroom training and on-site training. This paragraph shall describe the training of the personnel responsible for the implementation of the system with the contractor's staff and other personnel. The support personnel and their roles and responsibilities shall be described.

2. This paragraph shall describe the anticipated areas of change. This paragraph shall describe the anticipated areas of change to the delivery system.

3. This paragraph shall describe the contractor's plan for implementing the delivery system. This paragraph shall describe the contractor's plan for implementing the delivery system. This paragraph shall describe the contractor's plan for implementing the delivery system.

- a. This section shall describe the contractor's plan for implementing the delivery system.
- b. This section shall describe the contractor's plan for implementing the delivery system.
- c. This section shall describe the contractor's plan for implementing the delivery system.
- d. This section shall describe the contractor's plan for implementing the delivery system.
- e. This section shall describe the contractor's plan for implementing the delivery system.

4. This section shall describe the contractor's plan for implementing the delivery system. This section shall describe the contractor's plan for implementing the delivery system. This section shall describe the contractor's plan for implementing the delivery system.

5. This section shall describe the contractor's plan for implementing the delivery system. This section shall describe the contractor's plan for implementing the delivery system. This section shall describe the contractor's plan for implementing the delivery system.

DOCUMENT: BLM 80014B

SOFTWARE TEST PLAN (STP)

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STP STRUCTURE:

1. STP Structure
 - 1.1 Introduction
 - 1.2 Purpose
 - 1.3 Scope
 - 1.4 Definitions
2. Software Development
 - 2.1 Software Requirements
 - 2.2 Software Design
 - 2.3 Software Coding
 - 2.4 Software Testing
 - 2.5 Software Maintenance
3. Software Testing
 - 3.1 Test Planning
 - 3.2 Test Design
 - 3.3 Test Execution
 - 3.4 Test Results
 - 3.5 Test Summary
4. Software Maintenance
 - 4.1 Software Requirements
 - 4.2 Software Design
 - 4.3 Software Coding
 - 4.4 Software Testing
 - 4.5 Software Maintenance

DOCUMENT: IBM 8001-40
SOFTWARE TEST PLAN (STP)

DOCUMENT: BLM 80014B

SOFTWARE TEST PLAN (STP)

Purpose: The Software Test Plan (STP) describes plans for testing one or more Computer Software Configuration Items (CSCIs), integrated groups of CSCIs or CSCIs/HWCIs, and, possibly, a software system or segment. The STP identifies the software test environment resources required for the testing, describes the test approach, identifies the tests to be performed, and provides schedules for test activities.

The STP enables the Government to assess the adequacy of planning for test activities.

CONTENTS: This Data Item Description (DID) contains the format and content preparation instructions.

This DID may be used as an alternative to the Consolidated Software Test Document and the Completely Consolidated Software Development Record). Only one of these three DIDs should be applied to a given set of data.

Paragraphs that have been tailored out of the DID shall result in the corresponding paragraph number and title in the document, followed by "This paragraph has been tailored out." For data delivered in an alternative form, this representation need occur only in the table of contents or equivalent.

DOCUMENT STRUCTURE:

1. Scope
 - 1.1 Identification
 - 1.2 System overview
 - 1.3 Document overview
 - 1.4 Relationship to other plans
2. Referenced documents
3. Software test environment
 - 3.x (Name of test site(s))
 - 3.x.1 Software items
 - 3.x.2 Hardware and firmware items
 - 3.x.3 Other materials
 - 3.x.4 Proprietary nature, and Government rights
 - 3.x.5 Installation, testing, and control
 - 3.x.6 Participating organizations
 - 3.x.7 Personnel requirements
 - 3.x.8 Orientation plan
 - 3.x.9 Tests to be performed

4. Test identification
 - 4.1 General
 - 4.1.1 Test levels
 - 4.1.2 Test
 - 4.1.3 General test requirements
 - 4.1.4 Test Progression
 - 4.1.5 Data recording, reduction, and analysis
 - 4.2 Planned tests
 - 4.2.x (Item(s) to be tested)
 - 4.2.x.y (Test name and project-unique identifier)
5. Test schedules
6. Notes
7. Appendixes

1.1. General
 1.2. Test results
 1.3. Test results
 1.4. Test results
 1.5. Test results
 1.6. Test results
 1.7. Test results
 1.8. Test results
 1.9. Test results
 1.10. Test results
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1. Scope. This section shall be divided into the following paragraphs.
 - 1.1 Identification. This paragraph shall contain a full identification of the system and the CSCIs to which this document applies, including, as applicable, identification number(s), title(s), abbreviation(s), version number(s), and release number(s).
 - 1.2 System overview. This paragraph shall briefly state the purpose of the system and the software to which this document applies. It shall describe the general nature of the system and software; summarize the history of system development, operation, and maintenance; identify the project sponsor, user, developer, and support agencies; identify current and planned operating sites; and list other relevant documents.
 - 1.3 Document overview. This paragraph shall summarize the purpose and contents of this document.
 - 1.4 Relationship to other plans. This paragraph shall describe the relationship, if any, of the STP to related project management plans.
2. Referenced documents. This section shall list by document number and title all documents referenced in this plan. This section shall also identify the source for all documents not available through normal Government stocking activities.
3. Software test environment. This section shall be divided into the following paragraphs to describe the software test environment at each intended test site. To reduce duplication, references may be made in the paragraphs below to the software engineering environment described in the Software Development Plan (SDP) for those resources that are used in both environments.
 - 3.x (Name of test site(s)). This paragraph shall identify one or more test sites to be used for the testing, and shall be divided into the following subparagraphs to describe the software test environment at the site(s). If all tests will be conducted at a single site, this paragraph and its subparagraphs shall be presented only once. If multiple test sites use the same or similar software test environments, they may be discussed together. Duplicative information among test site descriptions may be reduced by referencing earlier descriptions.
 - 3.x.1 Software items. This paragraph shall identify by name,

number,

and version, as applicable, the software items (e.g., operating systems, compilers, communications software, related applications software, databases, input files, code auditors, dynamic path analyzers, test drivers, preprocessors, test data generators, test control software, other special test software, post-processors) necessary to perform the planned testing activities at the test site(s). This paragraph shall describe the purpose of each item, describe their media (tape, disk, etc.), identify those that are expected to be supplied by the site, and identify any classified processing or other security or privacy issues associated with the software items.

3.x.2 Hardware and firmware items. This paragraph shall identify by

name, number, and version, as applicable, the computer hardware, interfacing equipment, communications equipment, test data reduction equipment, apparatus such as extra peripherals (tape drives, printers, plotters), test message generators, test timing devices, test event records, etc., and firmware items that will be used in the software test environment at the test site(s). This paragraph shall describe the purpose of each item, state the period of usage and the quantity required of each item, identify those that are expected to be supplied by the site, and identify any classified processing or other security or privacy issues associated with the items.

3.x.3 Other materials. This paragraph shall identify and describe any

other materials needed for the testing at the test site(s). These materials may include manuals, listings of software and data, media containing the software to be tested, media containing data to be used in the tests, sample listings of outputs, such as test worksheets and other forms or instructions, etc. This paragraph shall identify those items that are to be delivered to the site and those that are expected to be supplied by the site. The description shall include the type, layout, and quantity of the materials, as applicable. This paragraph shall identify any classified processing or other security or privacy issues associated with the items.

3.x.4 Proprietary nature, and Government rights. This paragraph shall

identify the proprietary nature and Government rights associated with each item of the software test environment.

3.x.5 Installation, testing, and control. This paragraph

and various, as applicable, the following items are:
related systems, equipment, communication systems,
related applications software, databases, input files,
cost analysis, systems with analysis, test plans,
specifications, test data generated, test control
software, other special test software,
test procedures, necessary to perform the planned
testing activities in the test plan. This paragraph
shall describe the purpose of each item, describe each
item's name, and identify those items
expected to be included in the test plan and identify any
classified processing or other security or privacy
issues associated with the software items.

3.2.2 Test Plan and Test Results. This paragraph shall

Identify by

name, number, and version, as applicable, the computer
hardware, including equipment, communication
equipment, test data generated, input files, applications
software, test control software, test plans,
specifications, test data generated, test control
software, other special test software, and test
procedures, necessary to perform the planned testing
activities in the test plan. This paragraph shall describe the
purpose of each item, describe each item's name, and
identify those items expected to be included in the test plan
and identify any classified processing or other security or privacy
issues associated with the items.

3.2.3 Test Results. This paragraph shall identify and

describe by

name, number, and version, as applicable, the computer
hardware, including equipment, communication
equipment, test data generated, input files, applications
software, test control software, test plans,
specifications, test data generated, test control
software, other special test software, and test
procedures, necessary to perform the planned testing
activities in the test plan. This paragraph shall describe the
purpose of each item, describe each item's name, and
identify those items expected to be included in the test plan
and identify any classified processing or other security or privacy
issues associated with the items.

3.2.4 Test Results and Test Procedures. This

paragraph shall

identify the test results and test procedures
associated with each item in the software test
plan.

3.2.5 Test Results and Test Procedures. This paragraph

shall

shall

identify the contractor's plans for performing each of the following, possibly in conjunction with personnel at the test site(s):

- a. Installing and testing each item of the software test environment prior to its use.
- b. Controlling and maintaining each item of the software test environment

3.x.6 Participating organizations. This paragraph shall identify the

organizations that will participate in the testing at the test sites(s).

3.x.7 Personnel requirements. This paragraph shall identify the number

of personnel with indicated skill types required during the test period at the test site(s) and the dates and times they will be needed. It will indicate special requirements, such as multishift operation and assignment or retention of key skills to ensure continuity and consistency in extensive test programs.

3.x.8 Orientation plan. This paragraph shall describe any orientation

and training to be given before and during the testing. This information shall be related to the personnel requirements in paragraph 3.x.7. This training may include user instruction, operator instruction, maintenance and control group instruction, and orientation briefings to staff personnel. If extensive training is anticipated, a separate plan may be developed and referenced here.

3.x.9 Tests to be performed. This paragraph shall identify, by
referencing section 4, the tests to be performed at the test site(s).

4. Test identification. This section shall be divided into the following paragraphs to identify and describe each test to which this STP applies.

4.1 General information. This paragraph shall be divided into subparagraphs to present general information applicable to the overall testing to be performed.

4.1.1 Test levels. This paragraph shall describe the levels at which
testing will be performed. For example: CSCI level, CSCI to CSCI integration level, CSCI to HWCI

Identify the contractor's plans for performing each of the following, possibly in conjunction with personnel at the test site:

1. Identifying and testing each item of the software

2.1.1

2. Identifying and testing each item of the software
2.1.2

3. Identifying and testing each item of the software
3.1.1

4. Identifying and testing each item of the software
4.1.1

5. Identifying and testing each item of the software
5.1.1

6. Identifying and testing each item of the software
6.1.1

7. Identifying and testing each item of the software
7.1.1

8. Identifying and testing each item of the software
8.1.1

9. Identifying and testing each item of the software
9.1.1

integration level, system level.

4.1.2 Test classes. This paragraph shall describe the types or classes

of tests that will be performed (e.g., stress tests, timing tests, erroneous input tests, maximum capacity tests).

4.1.3 General test requirements. This subparagraph shall describe

requirements that apply to all of the tests or to a group of tests. For example: "Each test shall include nominal, maximum, and minimum values;" "Each test of type x shall use live data;" "Execution size and time shall be measured for each CSCI." Included shall be a statement of the extent of testing to be performed for all, or for groups of, tests and rationale for the extent selected. The extent of testing shall be expressed as a percentage of some well defined total quantity, as the number of samples of discrete operating conditions or values, or other sampling approach.

4.1.4 Test Progression. In cases of progressive or cumulative tests, this paragraph shall explain the planned sequence or progression of tests.

4.1.5 Data recording, reduction, and analysis. This paragraph shall identify and describe the data recording, reduction, and analysis procedures to be used during and after the tests identified in this STP. These procedures shall include, as applicable, manual, automatic, and semi-automatic techniques for recording test results, manipulating the raw results into a form suitable for evaluation, and retaining the results of data reduction and analysis.

4.2 Planned tests. This paragraph shall be divided into the following subparagraphs to describe the total scope of the planned testing.

4.2.x (Item(s) to be tested). This paragraph shall identify a CSCI, group of CSCIs, subsystem, system, or other entity by name and project-unique identifier, and shall be divided into the following sub-paragraphs to describe the testing planned for the item(s). (Note: the "tests" in this plan are collections of test cases. There is no intent to describe each test case in this document.)

4.2.x.y (Test name and project-unique identifier). This

subparagraph

shall identify a test by name and project-unique identifier and shall provide the information specified below for the test. Some or all of this information may be provided graphically. Reference may be made as needed to the general information in 4.1.

- a. Test objective
- b. Test level
- c. Test type or class
- d. Qualification method(s) as specified in the requirements specification
- e. Cross reference to the software or system requirements addressed by this test
- f. Any special requirements [e.g., 48 hours of continuous facility time, weapon simulation, extent of test, use of a special input or database, etc.]
- g. Type of data to be recorded
- h. Type of data recording/reduction/analysis to be employed
- i. Assumptions and constraints, such as anticipated limitations on the test due to system or test conditions-- timing, interfaces, equipment, personnel, database, etc.)
- j. Any security and privacy considerations associated with the test due to system or test conditions

5. Test schedules. This section shall contain or reference the schedules for conducting the tests identified in this plan. It shall provide:

- a. A listing or chart depicting the sites at which the testing will be scheduled and the time frames during which the testing will be conducted
- b. A chart for each test site depicting the activities and events listed below, as applicable, in chronological order with supporting narrative as necessary:
 - 1) Overall on-site test period by calendar date and portions of the period assigned to major portions of test
 - 2) Pretest on-site period required for

system

debugging, orientation, and
familiarization

database/

- 3) Period assigned for the collection of
data bank values, input
values, and other operational
data required for system test

- 4) Period assigned for user orientation and
familiarization with system
documentation

operator

- 5) Period assigned for user training,
training, maintenance and control group
training, and management orientation
briefing

and

- 6) Period assigned for preparation, review,
approval of the Software Test Report

6. Notes. This section shall contain any general
information that aids in understanding this document.
This section shall include an alphabetical listing of
all acronyms, abbreviations, and their meanings as used
in this document and a list of any terms and
definitions needed to understand this document.

- 7 Appendixes. Appendixes may be used to provide
information published separately for convenience in
document maintenance (e.g., charts, classified data).
As applicable, each appendix shall be referenced in the
main body of the document where the data would normally
have been provided. Appendixes may be bound as
separate documents for ease in handling. Appendixes
shall be lettered alphabetically (A, B, etc.).

debugging, interaction, and
facilitation

Database

Period assigned for the collection of
data: both before, during,
and after operations.
Data reported for system test

Period assigned for user satisfaction and
facilitation with system
Documentation

Overview

Period assigned for user training,
facilitation, and system
testing and evaluation
Testing

and

Period assigned for preparation, testing,
approval of the software test report

2.

Before the system shall be tested,
the test plan shall be approved by the sponsor.
This section shall include an approved list of
all test cases, test procedures, and test results as used
in this document and a list of any errors and
deficiencies noted in conducting the test.

3.

Questions: Questions may be used to provide
information needed for the test plan.
The sponsor shall provide the test plan, test
procedures, and test results as used in this
document. The sponsor shall be responsible for
the test plan, test procedures, and test results
as used in this document. The sponsor shall be
responsible for the test plan, test procedures,
and test results as used in this document.

DOCUMENT: BLM 80015B

**SOFTWARE TEST
DESCRIPTION
(STD)**

DOCUMENT: BLM 80015B

SOFTWARE TEST DESCRIPTION (STD)

PURPOSE: The Software Test Description (STD) contains the test cases and test procedures necessary to perform testing of a Computer Software Configuration Item (CSCI), an integrated group of CSCIs or CSCIs/HWCIs, or a software system or segment.

The STD enables the Government to assess the adequacy of the test cases and test procedures to be performed.

CONTENT: This Data Item Description (DID) contains the format and content preparation instructions.

This DID is an alternative to Consolidated Software Test Document and Completely Consolidated Software Development Record. Only one of these three DIDs should be applied to a given set of data. Paragraphs that have been tailored out of the DID shall result in the corresponding paragraph number and title in the document, followed by "This paragraph has been tailored out." For data delivered in an alternative form, this representation need occur only in the table of contents or equivalent.

DOCUMENT STRUCTURE:

1. Scope
 - 1.1 Identification
 - 1.2 System overview
 - 1.3 Document overview
2. Referenced documents
3. Test preparations
 - 3.x (Test name and project-unique identifier)
 - 3.x.1 (Test name) schedule
 - 3.x.2 (Test name) pre-test procedures
 - 3.x.2.1 Hardware preparation
 - 3.x.2.2 Software and data preparation
 - 3.x.2.3 Other pre-test preparations
4. Test descriptions
 - 4.x (Test name and project-Unique identifier)
 - 4.x.y (Test case name and project-unique identifier)
 - 4.x.y.1 Requirements traceability
 - 4.x.y.2 Means of control
 - 4.x.y.3 Initialization
 - 4.x.y.4 Test inputs
 - 4.x.y.5 Expected test results
 - 4.x.y.6 Criteria for evaluating

CHAPTER 10: THE HISTORY OF THE UNITED STATES

The history of the United States is a complex and multifaceted story. It begins with the first inhabitants of the continent, who arrived thousands of years ago. The story continues through the years of exploration, settlement, and the struggle for independence. The United States has been shaped by the actions of many individuals and the forces of nature. The history of the United States is a story of growth, change, and the pursuit of a better life.

The history of the United States is a story of growth, change, and the pursuit of a better life. It is a story of the people who have shaped the nation and the forces that have shaped the nation. The history of the United States is a story of the people who have shaped the nation and the forces that have shaped the nation.

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CHAPTER 11: THE HISTORY OF THE UNITED STATES

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results

4.x.y.7 Test procedure

4.x.y.8 Assumptions and
constraints

5. Notes

6. Appendixes

1. Scope. This section shall be divided into the following paragraphs.
 - 1.1 Identification. This paragraph shall contain a full identification of the system and the CSCIs to which this document applies, including, as applicable, identification number(s), title(s), abbreviation(s), version number(s), and release number(s).
 - 1.2 System overview. This paragraph shall briefly state the purpose of the system and the software to which this document applies. It shall describe the general nature of the system and software; summarize the history of system development, operation, and maintenance; identify the project sponsor, user, developer, and support agencies; identify current and planned operating sites; and list other relevant documents.
 - 1.3 Document overview. This paragraph shall summarize the purpose and contents of this document.
2. Referenced documents. This section shall list by document number and title all documents referenced in this document. This section shall also identify the source for all documents not available through normal Government stocking activities.
3. Test preparations. This section shall be divided into the following paragraphs to describe test preparations. Security and privacy considerations shall be included as applicable.
 - 3.x (Test name and project-unique identifier). This paragraph shall identify a test by name and identifier, shall provide a brief description, and shall be divided into the following subparagraphs.
 - 3.x.1 (Test name) schedule. This paragraph shall provide any updates or refinements to the test schedules and locations in the Software Test Plan. These updates shall include, as applicable, briefings, pre-test activities, testing, debriefings, and data reduction and analysis.
 - 3.x.2 (Test name) pre-test procedures. This paragraph shall be divided

into the following subparagraphs to describe the preparation and setup for the test. When the information required duplicates information previously specified for another test, that information may be referenced rather than repeated.

3.x.2.1 Hardware preparation. This paragraph shall describe the

procedures necessary to prepare the hardware for the test. Reference may be made to published operating manuals for these procedures. The following shall be provided, as applicable:

- a. The specific hardware to be used, identified by name and, if applicable, number.
- b. Any switch settings and cabling necessary to connect the hardware.
- c. One or more diagrams to show hardware, interconnecting control, and data paths.
- d. Precise step-by-step instructions for placing the hardware in a state of readiness.

3.x.2.2 Software and data preparation. This paragraph shall describe the

procedures and related information necessary to prepare the item(s) under test and any required support software and data for the test. Reference may be made to published software manuals for these procedures. The following information shall be provided, as applicable:

- a. The storage medium of the item(s) under test (e.g., magnetic tape, diskette).
- b. The storage medium of any support software (e.g., simulators, test drivers).
- c. The storage medium of any stored data needed for the test.
- d. Instructions for loading the software and data, including required sequence.
- e. Instructions for software and data initialization common to more than one test case.

3.x.2.3 Other pre-test preparations. This paragraph shall describe any other pre-test personnel actions, preparations, or procedures necessary to perform the test.

4. Test descriptions. This section shall be divided into

the following paragraphs. Security and privacy considerations shall be included as applicable.

4.x (Test name and project-unique identifier). This paragraph shall identify a test by name and project-unique identifier and shall be divided into the following subparagraphs.

4.x.y (Test case name and project-unique identifier). This paragraph shall identify a test case by name and project-unique identifier, state its purpose, and provide a brief description. The following subparagraphs shall provide a detailed description of the test case.

4.x.y.1 Requirements traceability. This paragraph shall identify the software requirements that are addressed by the test case.

4.x.y.2 Means of control. This paragraph shall indicate whether the test case is to be controlled by:

a. Manual means - manual insertion of inputs and manual control of test sequence.

b. Semiautomatic means - manual insertion of inputs; automatic control of test sequence (by test software).

c. Automatic means - preparation and use of test software to provide input, conduct test, and monitor and record test results.

4.x.y.3 Initialization. This paragraph shall identify any prerequisite

conditions that must be established prior to performing the test case. When the information required in this subparagraph duplicates information previously specified, that information may be referenced rather than repeated. The following considerations shall be discussed, as applicable:

a. Hardware and software configuration

b. Flags, initial breakpoints, pointers, control parameters, or initial data to be set/reset prior to test commencement

c. Preset hardware conditions or electrical states necessary to run the test case

d. Initial conditions to be used in making timing measurements
e. Conditioning of the simulated environment

The following paragraphs, summary and discussion
conclusions shall be included as appropriate.

1.1.1. The purpose of this report is to provide
information on the results of the study and to
discuss the findings in relation to the
following objectives:

1.1.2. The objectives of the study are to
investigate the effect of the treatment on
the response of the system and to determine
the effect of the treatment on the response
of the system. The following objectives shall be
included in the report:

1.1.3. The objectives of the study are to
investigate the effect of the treatment on
the response of the system and to determine
the effect of the treatment on the response
of the system.

1.1.4. The objectives of the study are to
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the response of the system and to determine
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1.1.5. The objectives of the study are to
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1.1.8. The objectives of the study are to
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1.1.9. The objectives of the study are to
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of the system.

1.1.10. The objectives of the study are to
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the response of the system and to determine
the effect of the treatment on the response
of the system. The following objectives shall
be included in the report:

1.1.11. The objectives of the study are to
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the response of the system and to determine
the effect of the treatment on the response
of the system.

1.1.12. The objectives of the study are to
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1.1.13. The objectives of the study are to
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1.1.14. The objectives of the study are to
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1.1.15. The objectives of the study are to
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the response of the system and to determine
the effect of the treatment on the response
of the system.

1.1.16. The objectives of the study are to
investigate the effect of the treatment on
the response of the system and to determine
the effect of the treatment on the response
of the system.

f. Special instructions peculiar to the test case

4.x.y.4 Test inputs. This paragraph shall describe the test inputs

necessary for the test case. The following shall be provided, as applicable:

- a. Name, purpose, and description (e.g., range of values, accuracy) of each test input.
- b. Source of the test input and the method to be used for selecting the test input.
- c. Whether the test input is real or simulated.
- d. Time or event sequence of test input (e.g., in response to question Y, input 4.375).
- e. The manner in which the input data will be controlled to:

1) Test the item(s) with a minimum/reasonable number of data types and values.

2) Exercise the item(s) with a range of valid data types and values that test for overload, saturation, and other "worst case" effects.

3) Exercise the item(s) with invalid data types and values to test for appropriate handling of irregular inputs.

4.x.y.5 Expected test results. This paragraph shall identify all

expected test results for the test case. Both intermediate and final test results shall be provided, as applicable.

4.x.y.6 Criteria for evaluating results. This paragraph shall identify

the criteria to be used for evaluating the intermediate and final results of the test case. When the information required in this paragraph duplicates information previously specified, that information may be referenced in this paragraph. For each test result, the following information shall be provided, as applicable:

a. The range over which an output can vary and still be acceptable.

b. Minimum number of combinations or alternatives of input and output conditions that constitute an acceptable

1. Special instructions provided to the test taker

2. Test results: Test taker's score and the score of the test taker's group

3. Summary of the test results and the following results provided to the test taker

4. Test, questions, and answers provided to the test taker

5. Summary of the test results and the following results provided to the test taker

6. Test results: Test taker's score and the score of the test taker's group

7. Summary of the test results and the following results provided to the test taker

8. Test results: Test taker's score and the score of the test taker's group

9. Summary of the test results and the following results provided to the test taker

10. Test results: Test taker's score and the score of the test taker's group

11. Summary of the test results and the following results provided to the test taker

12. Test results: Test taker's score and the score of the test taker's group

13. Summary of the test results and the following results provided to the test taker

14. Test results: Test taker's score and the score of the test taker's group

15. Summary of the test results and the following results provided to the test taker

16. Test results: Test taker's score and the score of the test taker's group

17. Summary of the test results and the following results provided to the test taker

18. Test results: Test taker's score and the score of the test taker's group

19. Summary of the test results and the following results provided to the test taker

20. Test results: Test taker's score and the score of the test taker's group

21. Summary of the test results and the following results provided to the test taker

22. Test results: Test taker's score and the score of the test taker's group

23. Summary of the test results and the following results provided to the test taker

24. Test results: Test taker's score and the score of the test taker's group

25. Summary of the test results and the following results provided to the test taker

26. Test results: Test taker's score and the score of the test taker's group

27. Summary of the test results and the following results provided to the test taker

28. Test results: Test taker's score and the score of the test taker's group

29. Summary of the test results and the following results provided to the test taker

- test result.
- c. Maximum/minimum allowable test duration, in terms of time or number of events.
 - d. Maximum number of interrupts, halts, or other system breaks that may occur
 - e. Allowable severity of processing errors.
 - f. Conditions under which the result is inconclusive and re-testing is to be performed.
 - g. Conditions under which the outputs are to be interpreted as indicating irregularities in input test data, in the test database/data bank, or in test procedures.
 - h. Allowable indications of the control, status, and results of the test and the readiness for the next test case (may be output of auxiliary test software).
 - i. Additional criteria not mentioned above.

4.x.y.7 Test procedure. This paragraph shall define the test procedure for the test case. The test procedure shall be defined as a series of individually numbered steps listed sequentially in the order in which the steps are to be performed. For convenience in document maintenance, the test procedures may be included as an appendix and referenced in this paragraph. The appropriate level of detail in each test procedure depends on the type of software being tested. For some software, each keystroke may be a separate test procedure step; for most software, each step may include a logically related series of keystrokes or other actions. The appropriate level of detail is the level at which it is useful to specify expected results and compare them to actual results. The following shall be provided for each test procedure, as applicable:

- a. Test operator actions and equipment operation required for each step, including commands, as applicable, to:

- 1) Initiate the test case
- 2) Inspect test conditions
- 3) Perform interim evaluations of test results
- 4) Record data
- 5) Halt or interrupt the test case
- 6) Request data dumps or other aids, if needed
- 7) Modify the database/data bank
- 8) Repeat the test case if unsuccessful
- 9) Apply alternate modes as required by the test

1. The first part of the report is a general introduction to the subject of the study. It discusses the importance of the problem and the objectives of the study. It also mentions the scope of the study and the limitations of the study.

2. The second part of the report is a literature review. It discusses the work of other researchers in the field and identifies the gaps in the knowledge. It also discusses the theoretical framework of the study.

3. The third part of the report is a description of the research methodology. It discusses the research design, the data collection methods, and the data analysis methods.

4. The fourth part of the report is a presentation of the results of the study. It discusses the findings of the study and compares them with the findings of other researchers.

5. The fifth part of the report is a discussion of the implications of the study. It discusses the practical implications of the study and the theoretical implications of the study.

6. The sixth part of the report is a conclusion. It summarizes the findings of the study and provides recommendations for further research.

7. The seventh part of the report is a list of references. It lists the works of other researchers that have been cited in the report.

8. The eighth part of the report is an appendix. It contains supplementary material that is related to the study but is not included in the main text of the report.

9. The ninth part of the report is a glossary. It defines the terms that are used in the report.

10. The tenth part of the report is a list of figures and tables. It lists the figures and tables that are included in the report.

11. The eleventh part of the report is a list of footnotes. It contains footnotes that provide additional information about the references and the figures and tables.

12. The twelfth part of the report is a list of appendices. It contains appendices that provide additional information about the study.

13. The thirteenth part of the report is a list of references. It lists the works of other researchers that have been cited in the report.

14. The fourteenth part of the report is an appendix. It contains supplementary material that is related to the study but is not included in the main text of the report.

15. The fifteenth part of the report is a glossary. It defines the terms that are used in the report.

16. The sixteenth part of the report is a list of figures and tables. It lists the figures and tables that are included in the report.

case

10) Terminate the test case

- b. Expected result for each step
- c. Evaluation criteria for each step, as applicable
- d. Actions to follow in the event of a program stop
or
indicated error, such as:

- 1) Recording of critical data from indicators
for
reference purposes.
- 2) Halting or pausing time-sensitive test-
support software
and test apparatus.
- 3) Collection of system and operator records of
test
results.
- e. Procedures to be used to reduce and analyze test
results to
accomplish the following, as applicable:
 - 1) Detect whether an output has been produced.
 - 2) Identify media and location of data
produced by the
test case.
 - 3) Evaluate output as a basis for continuation
of test
sequence.
 - 4) Evaluate test output against required output.

4.x.y.8 Assumptions and constraints. This paragraph shall
identify any
assumptions made and constraints or limitations imposed
in the description of the test case due to system or
test conditions, such as limitations on timing,
interfaces, equipment, personnel, and database/data
bank. If waivers or exceptions to specified limits and
parameters are approved, they shall be identified and
this paragraph shall address their effects and impacts
upon the test case.

5. Notes. This section shall contain any general
information that aids in understanding this document
(e.g., background information, glossary). This section
shall include an alphabetical listing of all acronyms,
abbreviations, and their meanings as used in this
document and a list of any terms and definitions needed
to understand this document.

6. Appendixes. Appendixes may be used to provide
information published separately for convenience in

1. Expenses should be paid only
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document maintenance (e.g., charts, classified data).
As applicable, each appendix shall be referenced in the
main body of the document where the data would normally
have been provided.

DOCUMENT:BLM C-800258

CONSOLIDATED SOFTWARE REQUIREMENTS DOCUMENT (C-SRD)

REVISION 1.0

System/Segment Contents	BLM 800258
System/Segment Specifications	BLM 800258
Software Requirements Specifications	BLM 800258
Hardware Requirements Specifications	BLM 800258

Document maintained in 4-4 Series; classified data.
in applicable, were applied and I am interested in the
main body of the document where the data would normally
have been provided.

DOCUMENT:BLM C-80025B

CONSOLIDATED SOFTWARE REQUIREMENTS DOCUMENT (C-SRD)

Alternate For:

Operational Concepts	- BLM 80035B
System/Segment Specifications	- BLM 80008B
Software Requirements Specifications	- BLM 80025B
Interface Requirements Specifications	- BLM 80026B

DOCUMENT: RIA C-8001B
CONSOLIDATED SOFTWARE
REQUIREMENTS DOCUMENT (C-8RD)

Version 1.0

Document: RIA C-8001B
Document: RIA C-8001B
Document: RIA C-8001B
Document: RIA C-8001B
Document: RIA C-8001B

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CONSOLIDATED SOFTWARE REQUIREMENTS DOCUMENT (C-SRD)

PURPOSE: The Consolidated Software Requirements Document (C-SRD) is a single document encompassing the operational concept for a system and the requirements for the system, for one or more CSCIs, and for the external interfaces of those CSCIs.

CONTENTS: This document contains, in summary form, the contents of the Operational Concept Document (OCD), System/Segment Specification (SSS), Software Requirements Specifications (SRSs), and Interface Requirements Specifications (IRSs) for a project.

A C-SRD is written as an alternative to the individual Software Requirements Specifications document. It is best suited to a project on which a single concept and requirements document is most effective.

Paragraphs that have been tailored out of the DID shall result in the corresponding paragraph number and title in the document, followed by "This paragraph has been tailored out."

DOCUMENT STRUCTURE:

1. Scope
 - 1.1 Identification
 - 1.2 System overview
 - 1.3 Document overview
2. Referenced documents
3. Operational concept
 - 3.1 Current system or situation
 - 3.2 Justification for and nature of changes
 - 3.3 Concept for a new or modified system
 - 3.4 Operational scenarios
 - 3.5 Summary of impacts
 - 3.6 Analysis of the proposed system
4. System/segment specification
 - 4.1 Requirements
 - 4.1.1 Definition
 - 4.1.2 Characteristics
 - 4.1.2.1 Performance characteristics
 - 4.1.2.2 Database/data bank requirements
 - 4.1.2.3 External interface requirements
 - 4.1.2.4 Physical
 - 4.1.2.5 System quality factors
 - 4.1.2.6 Environmental requirements
 - 4.1.2.7 Transportability
 - 4.1.2.8 Flexibility and expansion
 - 4.1.2.9 Portability
 - 4.1.3 Design and construction
 - 4.1.4 Documentation

- 4.1.5 Logistics
 - 4.1.6 Personnel and training
 - 4.1.7 Characteristics of subordinate elements
 - 4.1.8 Precedence
 - 4.2 Quality assurance provisions
 - 4.3 Preparation for delivery
- 5. Software requirements specification
 - 5.x becomes the Allocated Baseline for the corresponding CSCI.
 - 5.x (CSCI name/identifier)
 - 5.x.1 Engineering requirements
 - 5.x.1.1 CSCI external interface requirements
 - 5.x.1.2 CSCI capability requirements
 - 5.x.1.3 CSCI internal interfaces
 - 5.x.1.4 CSCI internal data element requirements
 - 5.x.1.5 Adaptation requirements
 - 5.x.1.6 Sizing and timing requirements
 - 5.x.1.7 Safety requirements
 - 5.x.1.8 Security and privacy requirements
 - 5.x.1.9 Design constraints
 - 5.x.1.10 Software quality factors
 - 5.x.1.11 Human performance/human engineering requirements
 - 5.x.1.12 Requirements traceability
 - 5.x.2 Qualification requirements
 - 5.x.3 Preparation for delivery
- 6. Interface requirements specification
 - 6.1 Interface requirements
 - 6.1.1 Interface identification and diagrams
 - 6.1.x (Interface name and project-unique identifier)
 - 6.1.x.1 Data element requirements
 - 6.1.x.2 Messages or other data assemblies
 - 6.1.x.3 Interface priorities
 - 6.1.x.4 Interface/communication protocols
- 7. Notes
- 8. Appendixes

4.1.1	Legislation	1
4.1.2	Standards and criteria	2
4.1.3	Classification of management systems	3
4.1.4	Structure	4
4.2	Quality assurance processes	5
4.3	Preparation for delivery	6
4.4	Delivery management systems	7
4.5	Delivery for the customer	8
4.6	Customer service	9
4.7	Customer feedback	10
4.8	Customer satisfaction	11
4.9	Customer loyalty	12
4.10	Customer retention	13
4.11	Customer acquisition	14
4.12	Customer segmentation	15
4.13	Customer targeting	16
4.14	Customer positioning	17
4.15	Customer differentiation	18
4.16	Customer advantage	19
4.17	Customer value	20
4.18	Customer benefits	21
4.19	Customer costs	22
4.20	Customer profitability	23
4.21	Customer lifetime value	24
4.22	Customer churn	25
4.23	Customer attrition	26
4.24	Customer defection	27
4.25	Customer recovery	28
4.26	Customer retention strategies	29
4.27	Customer acquisition strategies	30
4.28	Customer segmentation strategies	31
4.29	Customer targeting strategies	32
4.30	Customer positioning strategies	33
4.31	Customer differentiation strategies	34
4.32	Customer advantage strategies	35
4.33	Customer value strategies	36
4.34	Customer benefits strategies	37
4.35	Customer costs strategies	38
4.36	Customer profitability strategies	39
4.37	Customer lifetime value strategies	40
4.38	Customer churn strategies	41
4.39	Customer attrition strategies	42
4.40	Customer defection strategies	43
4.41	Customer recovery strategies	44
4.42	Customer retention strategies	45
4.43	Customer acquisition strategies	46
4.44	Customer segmentation strategies	47
4.45	Customer targeting strategies	48
4.46	Customer positioning strategies	49
4.47	Customer differentiation strategies	50
4.48	Customer advantage strategies	51
4.49	Customer value strategies	52
4.50	Customer benefits strategies	53
4.51	Customer costs strategies	54
4.52	Customer profitability strategies	55
4.53	Customer lifetime value strategies	56
4.54	Customer churn strategies	57
4.55	Customer attrition strategies	58
4.56	Customer defection strategies	59
4.57	Customer recovery strategies	60
4.58	Customer retention strategies	61
4.59	Customer acquisition strategies	62
4.60	Customer segmentation strategies	63
4.61	Customer targeting strategies	64
4.62	Customer positioning strategies	65
4.63	Customer differentiation strategies	66
4.64	Customer advantage strategies	67
4.65	Customer value strategies	68
4.66	Customer benefits strategies	69
4.67	Customer costs strategies	70
4.68	Customer profitability strategies	71
4.69	Customer lifetime value strategies	72
4.70	Customer churn strategies	73
4.71	Customer attrition strategies	74
4.72	Customer defection strategies	75
4.73	Customer recovery strategies	76
4.74	Customer retention strategies	77
4.75	Customer acquisition strategies	78
4.76	Customer segmentation strategies	79
4.77	Customer targeting strategies	80
4.78	Customer positioning strategies	81
4.79	Customer differentiation strategies	82
4.80	Customer advantage strategies	83
4.81	Customer value strategies	84
4.82	Customer benefits strategies	85
4.83	Customer costs strategies	86
4.84	Customer profitability strategies	87
4.85	Customer lifetime value strategies	88
4.86	Customer churn strategies	89
4.87	Customer attrition strategies	90
4.88	Customer defection strategies	91
4.89	Customer recovery strategies	92
4.90	Customer retention strategies	93
4.91	Customer acquisition strategies	94
4.92	Customer segmentation strategies	95
4.93	Customer targeting strategies	96
4.94	Customer positioning strategies	97
4.95	Customer differentiation strategies	98
4.96	Customer advantage strategies	99
4.97	Customer value strategies	100
4.98	Customer benefits strategies	101
4.99	Customer costs strategies	102
4.100	Customer profitability strategies	103

1. Scope. This section shall be divided into the following paragraphs.
- 1.1 Identification. This paragraph shall contain a full identification of the system and the CSCIs to which this document applies, including, as applicable, identification number(s), title(s), abbreviation(s), version number(s), and release number(s).
- 1.2 System overview. This paragraph shall briefly state the purpose of the system and the software to which this document applies. It shall describe the general nature of the system and software; summarize the history of system development, operation, and maintenance; identify the project sponsor, user, developer, and support agencies; identify current and planned operating sites; and list other relevant documents.
- 1.3 Document overview. This paragraph shall summarize the purpose and contents of this document.
2. Referenced documents. This section shall list by document number and title all documents referenced in this document. This section shall also identify the source for all documents not available through normal Government stocking activities.
3. Operational concept. This section shall be divided into the following paragraphs to describe a proposed system in terms of the user needs it will fulfill, its relationship to existing systems or procedures, and the ways it will be used.
- 3.1 Current system or situation. This paragraph shall be divided into subparagraphs as needed to describe:
 - a. The background, objectives, and scope of the current system or situation.
 - b. Any operational policies and constraints that apply to the current system or situation.
 - c. The current system or situation, including variations in different states and modes of operation (e.g., regular, maintenance, training, degraded, emergency, wartime):
 - 1) The operational environment and its characteristic
 - 2) Major components and the interconnections among these components
 - 3) Interfaces to external systems or procedures
 - 4) Capabilities/functions of the current system
 - 5) Chart and description of inputs, outputs, data flow, and manual/automated processes
 - 6) Performance characteristics, such as speed, throughput, volume, frequency
 - 7) Quality attributes, such as reliability, maintainability, availability

These two sections shall be divided into the following paragraphs:

1.1.1. The first paragraph shall contain a full identification of the system and the title of the document, including, as appropriate, identification number(s), version, author(s), date of issue, and release.

1.1.2. The second paragraph shall identify the purpose of the system and the reference to which the document applies. It shall describe the general nature of the system and define its function, including the history of system development, design, and construction. It shall identify the project sponsor, user, designer, and developer, identify the system and its components, and list other relevant documents.

1.1.3. The third paragraph shall identify the purpose and function of the document.

1.1.4. The fourth paragraph shall identify the system and its components, including the hardware, software, and documentation. It shall identify the system and its components, including the hardware, software, and documentation.

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1.1.13. The thirteenth paragraph shall identify the system and its components, including the hardware, software, and documentation. It shall identify the system and its components, including the hardware, software, and documentation.

1.1.14. The fourteenth paragraph shall identify the system and its components, including the hardware, software, and documentation. It shall identify the system and its components, including the hardware, software, and documentation.

- 8) Provisions for safety, security, privacy, and continuity of operations
- d. The types of users of the system, or personnel involved in the current situation, including, as applicable, organizational structures, training/skills, responsibilities, and interactions with one another.
- e. The support concept and environment for the current system

3.2 Justification for and nature of changes. This paragraph shall be divided into subparagraphs as needed to describe:

- a. The justification for change, including:
 - 1) New or modified aspects of user needs, missions, objectives, environments, interfaces, personnel or other factors that require a new or modified system.
 - 2) Deficiencies or limitations in the current system or situation that make it unable to respond to these factors.
- b. New or modified capabilities or other changes needed to respond to these factors
- c. Priorities among the changes
- d. Changes considered but not included
- e. Assumptions and constraints applicable to the changes

3.3 Concept for a new or modified system. This paragraph shall be divided into subparagraphs as needed to describe a new or modified system. It shall describe, as applicable:

- a. The background, objectives, and scope of the new or modified system
- b. Any operational policies and constraints that apply to the new or modified system
- c. The new or modified system, including variations in different states and modes of operation (e.g., regular, maintenance, training, degraded, emergency, wartime):
 - 1) The operational environment and its characteristics
 - 2) Major components and the interconnections among these components
 - 3) Interfaces to external systems or procedures
 - 4) Capabilities/functions of the new or modified system
 - 5) Chart and description of inputs, outputs, data flow, and manual/automated processes
 - 6) Performance characteristics, such as speed, throughput, volume, frequency
 - 7) Quality attributes, such as reliability, maintainability, availability

7. The system for safety, security, privacy, and
integrity of operations

8. The types of users of the system, or personnel involved in
the current situation, including the application
organizational structure, training, testing,
responsibilities, and interactions with other systems

9. The support needed and environment for the current system

10. Identification for and impact of changes. This paragraph shall be
divided into sub-paragraphs as needed to describe:

a. The justification for change, including:

1. How the existing system is not meeting the needs, objectives,
requirements, or performance of the system, or how the system is
not meeting the needs of the user or the system

2. The impact of the change on the existing system or
on the user or the system, including the impact on the
system's performance, security, and integrity

3. How the existing system is not meeting the needs, objectives,
requirements, or performance of the system, or how the system is
not meeting the needs of the user or the system

4. The impact of the change on the existing system or
on the user or the system, including the impact on the
system's performance, security, and integrity

5. The impact of the change on the existing system or
on the user or the system, including the impact on the
system's performance, security, and integrity

6. The impact of the change on the existing system or
on the user or the system, including the impact on the
system's performance, security, and integrity

7. Any operational policies and procedures that apply to the
new or modified system

8. The new or modified system, including the system's
architecture, data, and other information, including the
system's performance, security, and integrity

9. The operational environment and the system's
performance, security, and integrity

10. The impact of the change on the existing system or
on the user or the system, including the impact on the
system's performance, security, and integrity

11. The impact of the change on the existing system or
on the user or the system, including the impact on the
system's performance, security, and integrity

12. The impact of the change on the existing system or
on the user or the system, including the impact on the
system's performance, security, and integrity

13. The impact of the change on the existing system or
on the user or the system, including the impact on the
system's performance, security, and integrity

14. The impact of the change on the existing system or
on the user or the system, including the impact on the
system's performance, security, and integrity

8) Provisions for safety, security, privacy, and continuity of operations

- d. The types of users of the system, including, as applicable, organizational structures, training/skills, responsibilities, and interactions with one another
- e. The support concept and environment for the new or modified system

3.4 Operational scenarios. This paragraph shall describe one or more operational scenarios that illustrate the role of the new or modified system, its interface to other systems, and all states or modes identified for the system.

3.5 Summary of impacts. This paragraph shall be divided into subparagraphs as needed to describe the operational and organization impacts on the user, development, and support/maintenance agency(ies), and the anticipated impacts on these organizations during the development process.

3.6 Analysis of the proposed system. This paragraph shall be divided into subparagraphs as needed to provide:

- a. A qualitative and quantitative summary of the benefits to be obtained from the new or modified system, including new and enhanced capabilities or performance.
- b. A qualitative and quantitative summary of disadvantages or limitations of the new or modified system.
- c. A description of major alternatives considered, the trade-offs among them, and rationale for the decisions reached

4. System/segment specification. This section shall be divided into the following paragraphs to specify the requirements (conditions for acceptance) for the system or segment. Upon Government approval this section becomes the Functional Baseline for the system or segment. The word "system" may be interpreted to mean "segment" as applicable in this section.

4.1 Requirements.

4.1.1 Definition. This paragraph shall provide a brief description of the system, identifying any states or modes in which the system is required to operate (for example, idle, ready, active, post-use analysis, training, degraded, emergency, backup). Note: the distinction between states and modes is arbitrary. A system may be described in terms of states only, modes only, states within modes, modes within states, or any other scheme that seems useful. If the system operates without states or modes, this paragraph shall so state, without the need to create artificial distinctions.

- 4.1.2 Characteristics. This paragraph shall be divided into the following subparagraphs to describe the requirements for the system. Each requirement or group of requirements shall be annotated to indicate the states and modes in which it applies, either in the text, in an accompanying table, or by other means.
- 4.1.2.1 Performance characteristics. This paragraph shall be divided into subparagraphs, each identifying a capability of the system by name and project-unique identifier, describing its purpose, and itemizing the requirements for that capability. A "capability" is defined as a group of related requirements. The word "capability" may be replaced by "function," "subject," "object," or other term useful for presenting the requirements. Each requirement shall be given a unique identifier. The requirements shall include applicable parameters, such as response times, sequencing, accuracy, capacities (how much/how many), priorities, continuous operation requirements, and allowable deviations based on operating conditions, and shall express these parameters in measurable terms. The requirements shall also include required behavior under unexpected or "out of bounds" conditions and for maintaining continuity of operations in the event of emergencies.
- 4.1.2.2 Database/data bank requirements. This paragraph shall be divided into subparagraphs as needed to identify each required database or data bank, state its purpose, and itemize the requirements imposed on it, including, as applicable, required data elements, required characteristics of the data elements, required relationships among data elements, and required storage capacity for the data, including growth capability.
- 4.1.2.3 External interface requirements. This paragraph shall be divided into subparagraphs as needed to identify each external item with which the system is required to interface, state the purpose of the interface, describe the relationship between the interface and the states and modes of the system, and itemize the requirements imposed on the system as a result of the interface, including, as applicable, physical interface requirements (dimensions, tolerances, loads, etc.); communication/data transfer requirements; characteristics of the inputs that must be accepted by the system from the item; characteristics of the outputs that must be provided by the system to the item; security or privacy requirements.
- 4.1.2.4 Physical characteristics. This paragraph shall specify any requirements for physical characteristics (e.g., weight limits, dimensional limits, color, protective coatings) of the system. Considerations for determining physical requirements include transportation and storage, security, privacy, durability (freedom from corrosion, abrasion, or other damage), safety, vulnerability. If there are no physical requirements (such as for a software-only system), this paragraph may be satisfied by "Not Applicable."

1.1.1. The purpose of this paragraph is to provide a general description of the system and its components. The system is designed to provide a secure and reliable means of communication between the various components of the system. The system is designed to be able to handle a large number of simultaneous connections and to be able to handle a large number of simultaneous connections.

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- 4.1.2.5 System quality factors. This paragraph shall be divided into subparagraphs as needed to specify any requirements pertaining to system quality factors, including, as applicable:
- a. Reliability (including failure contingencies)
 - b. Maintainability
 - c. Availability
 - d. Other quality factors
- 4.1.2.6 Environmental requirements. This paragraph shall be divided into subparagraphs as needed to specify any requirements regarding the environment within which the system is required to operate, including, as applicable:
- a. Environmental conditions the system must withstand
 - b. Computer equipment that must be used by, or incorporated into the system.
 - c. Support software that must be used by, or incorporated into, the system.
 - d. The communications environment within which the system must operate.
- 4.1.2.7 Transportability. This paragraph shall specify any special requirements for transportation and materials handling.
- 4.1.2.8 Flexibility and expansion. This paragraph shall specify any areas of growth that require planning for system flexibility and expansion and any system elements that require spare capacity to support flexibility and expansion.
- 4.1.2.9 Portability. This paragraph shall specify any requirements for portability to permit employment, deployment, and logistic support.
- 4.1.3 Design and construction. This paragraph shall be divided into subparagraphs as needed to specify any minimum system design and construction standards for the system, including, as applicable, requirements for:
- a. Materials
 - b. Nameplates and product marking
 - c. Workmanship
 - d. Interchangeability
 - e. Safety
 - f. Human engineering
 - g. System security and privacy,
 - h. Usage of Government furnished property
 - i. Computer resource reserve capacity
- 4.1.4 Documentation. This paragraph shall any specify requirements for system documentation such as specifications, drawings, technical manuals, test plans and procedures, and installation instruction data.

4.1.1.1 This paragraph shall be divided into sub-paragraphs as needed to specify any requirements pertaining to system quality factors, including, as applicable:

- a. Reliability (including failure considerations)
- b. Maintainability
- c. Availability
- d. Other quality factors

4.1.1.2 Sub-paragraphs shall be divided into sub-paragraphs as needed to specify any requirements pertaining to environment within which the system is required to operate, including, as applicable:

- a. Environmental conditions (the system shall withstand)
- b. Operating conditions that must be met by or imposed on the system
- c. Human factors that must be met by or imposed on the system
- d. The environmental environment within which the system shall operate

4.1.1.3 Reliability. This paragraph shall specify any specific requirements for system reliability and maintainability.

4.1.1.4 Availability and maintainability. This paragraph shall specify any requirements that must be met by or imposed on the system, including, as applicable:

- a. Reliability
- b. Maintainability
- c. Availability

4.1.1.5 Design and construction. This paragraph shall be divided into sub-paragraphs as needed to specify any requirements pertaining to construction standards for the system, including, as applicable:

- a. Materials
- b. Manufacturing and process control
- c. Workmanship
- d. Interoperability
- e. Safety
- f. Human engineering
- g. Human factors and safety
- h. Means of assembly, including assembly
- i. Computer resource resource capacity

4.1.1.6 Documentation. This paragraph shall specify requirements for system documentation such as specifications, drawings, test plans, test plans and procedures, and investigative documentation.

- 4.1.5 Logistics. This paragraph shall specify any logistic considerations and conditions that apply to the operational requirements. These considerations and conditions may include maintenance, transportation modes, supply system requirements, impact on existing facilities, and impact on existing equipment,
- 4.1.6 Personnel and training. This paragraph shall be divided into sub-paragraphs as needed to specify:
- a. Personnel requirements that must be integrated into system design
 - b. Requirements for the training to be provided: responsibilities; required equipment; training devices to be developed; training times and locations; training materials
- 4.1.7 Characteristics of subordinate elements. This paragraph shall be divided into subparagraphs as needed to identify and describe each segment of the system. This paragraph shall describe the relationships between the segments.
- 4.1.8 Precedence. This paragraph shall specify any order of precedence or assigned weights indicating the relative importance of the requirements.
- 4.2 Quality assurance provisions. This paragraph shall be divided into subparagraphs as needed to specify how compliance with the requirements of sections 4.1 and 4.3 is to be assured. It shall include:
- a. Definition of the qualification methods to be used (for example, demonstration, test, analysis, inspection)
 - b. Assignment of one or more of these methods to each requirement.
 - c. Description of any special tests or examinations to be performed, including requirements, as applicable, for standard samples, preproduction or periodic production samples, a pilot model, or a pilot lot.
- 4.3 Preparation for delivery. This paragraph shall specify requirements for the preparation of the system and all its components for delivery, including packaging and handling.
5. Software requirements specification. This section shall be divided into the following paragraphs to specify the engineering and qualification requirements for one or more Computer Software Configuration Item (CSCIs). Upon Government approval and authentication, each section 5.x becomes the Allocated Baseline for the corresponding CSCI.
- x (CSCI name/identifier).

- 5.x.1 Engineering requirements. This paragraph shall be divided into the following subparagraphs to specify the engineering requirements (conditions for acceptance) for the CSCI. If the CSCI is part of a larger system, requirements to be included shall be the software requirements generated to satisfy the system or segment requirements allocated to this CSCI.
- 5.x.1.1 CSCI external interface requirements. This paragraph shall identify each required CSCI-external interface and shall reference Section 6 or other document for the requirements for each interface.
- 5.x.1.2 CSCI capability requirements. This paragraph shall be divided into subparagraphs to identify each CSCI capability, state its purpose, and itemize the requirements associated with the capability. Capabilities may be divided into subcapabilities as needed, and the word "capability" may be replaced with "function," "subject," "object," or other term useful for presenting the requirements. The requirements shall include applicable parameters, such as response times, sequencing, accuracy, capacities (how much/how many), priorities, continuous operation requirements, and allowable deviations based on operating conditions, and shall express these parameters in measurable terms. The requirements shall also include required behavior under unexpected or "out of bounds" conditions and any provisions to be incorporated into the CSCI to provide continuity of operations in the event of emergencies. Each requirement shall be stated in such a way that an objective test can be defined for it. If the system of which the CSCI is a part can exist in various system states and modes, each CSCI requirement or group of requirements shall be correlated to those states and modes.
- 5.x.1.3 CSCI internal interfaces. This paragraph shall identify any requirements imposed on the interfaces between the capabilities identified above. If all internal interfaces are left to the design, this fact shall be so stated. Each internal interface on which requirements are imposed shall be identified by name and project-unique identifier and the interface requirements shall be itemized. Internal interface diagrams depicting data flow, control flow, and other relevant information may be used to aid in this description.
- 5.x.1.4 CSCI internal data element requirements. This paragraph shall specify any requirements imposed on the data elements internal to the CSCI. If all decisions about internal data elements are left to the design, this fact shall be so stated. If they have been covered elsewhere in this specification, they need not be repeated here. If requirements are imposed on data elements internal to the CSCI they shall include, as applicable:
- a. A project-unique identifier for the data element
 - b. A brief description of the data element
 - c. Units of measure required for the data element, such as seconds, meters, kilohertz

2.1.1. This paragraph shall be divided into two parts. The first part shall be devoted to the description of the system and the second part shall be devoted to the description of the system's operation. The system shall be described in terms of its components, its functions, and its performance. The system's operation shall be described in terms of its inputs, its outputs, and its control logic.

2.1.2. This paragraph shall be divided into two parts. The first part shall be devoted to the description of the system and the second part shall be devoted to the description of the system's operation. The system shall be described in terms of its components, its functions, and its performance. The system's operation shall be described in terms of its inputs, its outputs, and its control logic.

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2.1.6. This paragraph shall be divided into two parts. The first part shall be devoted to the description of the system and the second part shall be devoted to the description of the system's operation. The system shall be described in terms of its components, its functions, and its performance. The system's operation shall be described in terms of its inputs, its outputs, and its control logic.

- d. Limit/range of values required for the data element (for constants, the actual value)
- e. Accuracy required for the data element
- f. Precision or resolution required for the data element in terms of significant digits
- g. Required format, such as field definitions

5.x.1.5 Adaptation requirements. This paragraph shall be divided into subparagraphs as needed to specify any adaptation requirements for the CSCI, including, as applicable:

- a. Any site-unique data required by each installation
- b. Any parameters required by the CSCI that may vary according to operational needs

5.x.1.6 Sizing and timing requirements. This paragraph shall specify:

- a. Sizing requirements on the CSCI, including, as applicable, amount/type/location of internal and auxiliary memory allocated to the CSCI; variations between normal operation and contingency operations; and other constraints imposed by the planned memory available to the CSCI.
- b. Timing requirements on the CSCI, including, as applicable, amount of processing time allocated to the CSCI; required throughput time; required response time to queries and other requests; sequential relationships of CSCIs; sequential relationships of CSCI capabilities; priorities imposed by type of inputs and modes of operation; timing requirements for range of loads under varying operating conditions; and required input/output transfer times.

5.x.1.7 Safety requirements. This paragraph shall specify any safety requirements applicable to the CSCI, concerning potential hazards to personnel, property, and the physical environment.

5.x.1.8 Security and privacy requirements. This paragraph shall specify any security and privacy requirements applicable to the CSCI. These requirements shall include, as applicable:

- a. The type and degree of security or privacy of data to be used in or processed by the CSCI, including when the data become sensitive or change sensitivity.
- b. The type and degree of security or privacy of the algorithms that are permitted or required to be used in the CSCI.
- c. The security and privacy environment that can be assumed to exist during operation.

5.x.1.9 Design constraints. This paragraph shall specify any other requirements that constrain the CSCI design, such as the use of a particular processing configuration. If there are no constraints imposed on the CSCI design, this fact shall be so stated.

5.x.1.10 Software quality factors. This paragraph shall be divided into subparagraphs as needed to specify any software quality factors identified in the contract or derived from a higher level specification and the method to be used to determine whether each quality factor has been met. These factors may include reliability (the ability to perform with correct, consistent results), maintainability (the ability to be easily corrected), availability (the ability to be accessed when needed), flexibility (the ability to be easily adapted to changing requirements), portability (the ability to be easily modified for a new hardware environment), reusability (the ability to be used in multiple applications), testability (the ability to be easily and thoroughly tested), usability (the ability to be easily learned and used), and other attributes.

5.x.1.11 Human performance/human engineering requirements. This paragraph shall specify any human factors engineering requirements imposed on the CSCI. These requirements shall include, as applicable, considerations for:

- a. Human information processing capabilities and limitations
- b. Foreseeable human errors under both normal and extreme conditions
- c. Implications for the total system environment (include training, support, and operational environment)

5.x.1.12 Requirements traceability. This paragraph shall contain a mapping of the engineering requirements in this specification to the system requirements allocated to this CSCI, and a mapping of the system requirements allocated to this CSCI to the engineering requirements in this specification.

5.x.2 Qualification requirements. This paragraph shall specify the qualification requirements necessary to establish that each requirement in 5.x.1 and 5.x.3 has been met. It shall include, as applicable:

- a. Definition of the qualification methods to be used (for example, demonstration, test, analysis, inspection)
- b. Assignment of one or more of these methods to each requirement
- c. Description of any special tests or examinations to be performed

5.x.3 Preparation for delivery. This paragraph shall specify any requirements for delivery, including delivery media, labeling, packaging, handling, and classification markings.

6. Interface requirements specification. This section shall be divided into the following paragraphs to specify the requirements for one or more interfaces between one or more CSCIs and other configuration items or critical items. These requirements may describe the interface characteristics of existing items or

specify the required interface characteristics of new or to-be-modified items.

6.1 Interface requirements.

6.1.1 Interface identification and diagrams. This paragraph shall identify the interfaces to which this specification applies. These items may include systems, other configuration items, and support software and hardware, such as utilities and test software, databases, and items in the communications environment. The identification of each item shall include its name, number, version, and documentation references. The identification shall state which items already exist (and therefore impose interface requirements on interfacing items) and which are being developed or modified (thus having interface requirements imposed on them). One or more interface diagrams, as appropriate, shall be provided to depict the interfaces. Each interface shall be identified by name and project-unique identifier, and shall specify, as applicable, the type of interface required (sequential or concurrent operation, real-time data transfer, store-and-retrieve data transfer, operator controlled, etc.).

6.1.x (Interface name and project-unique identifier). This paragraph (beginning with 6.1.2) shall identify an interface by name and project-unique identifier, shall state its purpose, and shall be divided into the following subparagraphs. When describing interface characteristics of existing items, read "established" for "required."

6.1.x.1 Data element requirements. This paragraph shall specify any requirements pertaining to data elements to be transmitted between the interfacing items, including, as applicable:

- a. A project-unique identifier for the data element
- b. A brief description of the data element
- c. The CSCI or other item that is the source of the data element, and an indication of which of these, if any, is imposing the requirement
- d. The CSCI(s) or other item(s) that are the recipients of the data element, and an indication of which of these, if any, is imposing the requirement
- e. The units of measure in which the data element must be sent or received
- f. The limit/range of values that must be sent or received for the data element (for constants, the actual value; when applicable, allowable codes, message types)
- g. The accuracy that must be possessed by the data element
- h. The precision or resolution with which the data element must be sent or received, in terms of number of significant digits
- i. The timing characteristics with which the data element must be sent or received (how often transmitted or received, transmitted for how long, etc.)
- j. Legality checks the data element must be able to pass

specify the required format characteristics of one or more
and their order.

Interface Requirements

Interface Identification and Description. This paragraph shall identify the interface to which this specification applies. It shall state any interface standards, which communication lines, and support hardware and software, such as address and data formats, alignment, and time in the communication environment. The identification of each item shall include the name, number, version, and documented references. The identification shall also state which items are already stated in other Japanese interface specifications or standards (name, number, and which are being developed or modified; items having interface requirements imposed on them). One or more interface diagrams, as appropriate, shall be provided to depict the interface. Each item shall be identified by name and project number identifier, and shall specify its applicable type of interface required (mechanical or electrical, type of interface, and data format, address and data format, version, and other characteristics, etc.).

Interface Data and Control Signals. This paragraph shall identify each data and control signal, its function, and shall be divided into the following categories: When describing interface characteristics of existing items, read "continued" for "required".

2.1.1.1. This paragraph shall specify any requirements pertaining to data elements to be transmitted between the interface items, including, as appropriate:

1. A project unique identifier for the data element.
2. A brief description of the data element.
3. The DDI or other ID that is the source of the data element, and an indication of which of these, if any, is required for the element.
4. The format or other identifier that is the recipient of the data element, and an indication of which of these, if any, is required for the element.
5. The range of values to which the data element must be sent or received.
6. The range of values to which the data element must be sent or received for the data element. (For constants, the actual value; when applicable, all possible values, number, type).
7. The accuracy and rate of transmission of the data element.
8. The position of each data element within the data element when sent or received, as shown in number of characters, digits.
9. The timing relationship with which the data element must be sent or received (time delay, time relationship, or relationship for data, etc.).
10. Location of the data element when it is sent or received.

- k. The data type (such as integer, ASCII, real, enumerated, etc.) in which the data element must be sent or received
- l. The data representation/format in which the data elements must be sent or received
- m. Sequence or other dependencies among the data elements

6.1.x.2 Messages or other data assemblies. This paragraph shall specify any requirements concerning messages or other assemblies of data elements to be transmitted between the interfacing items. It shall identify each such message or assembly by name and project-unique identifier and shall describe the assignment of data elements to each message or assembly.

6.1.x.3 Interface priorities. This paragraph shall specify any requirements concerning the relative priority of the interface, data elements, messages, or assemblies transmitted between the interfacing items.

6.1.x.4 Interface/communication protocols. This paragraph shall be divided into subparagraphs as needed to specify any requirements concerning commercial, military, or proprietary communications protocols to be used for the interface. It shall identify each protocol to be used and shall specify for each, as applicable, requirements for:

- a. Fragmentation and reassembly of messages
- b. Message formatting
- c. Legality checks, error control, and recovery procedures, including fault tolerance, handling of "out-of-bounds" conditions, and continuity of operations in emergencies
- d. Synchronization: connection establishment, maintenance, termination, timing
- e. Flow control, including sequence numbering, window size, and buffer allocation
- f. Data transfer rate, periodic or aperiodic, and minimum interval between transfers
- g. Routing, addressing, and naming conventions
- h. Transmission services, including priority and grade
- i. Status, identification, notification, and any other reporting features
- j. Security and privacy, including encryption, user authentication, compartmentalization, and auditing

6.2 Qualification requirements. This paragraph shall be divided into subparagraphs as needed to specify the qualification requirements necessary to establish that each requirement in 6.1 has been met. It shall include, as applicable:

- a. Definition of the qualification methods to be used (for example, demonstration, test, analysis, inspection)
- b. Assignment of one or more of these methods to each requirement
- c. Description of any special tests or examinations to be performed

- Notes. This section shall contain any general information that aids in understanding this document (e.g., background information, glossary, rationale). This section shall contain an alphabetical listing of all acronyms, abbreviations, and their meanings as used in this document, and a list of any terms and definitions needed to understand this document.

- Appendixes. Appendixes may be used to provide information published separately for convenience in document maintenance (e.g., charts, classified data). As applicable, each appendix shall be referenced in the main body of the document where the data would normally have been provided.

DOCUMENT: BLM C-80015B

CONSOLIDATED SOFTWARE TEST
DOCUMENT (C-STD)

Alternate For:

Software Test Plan	- BLM 80014B
Software Test Descriptions	- BLM 80015B
Software Test Report	- BLM 80017B

DOCUMENT: BLM C-800158
CONSOLIDATED SOFTWARE TEST
DOCUMENT (C-STD)

ALLIANCE INC.

Software Test Plan - BLM 800158
Software Test Case/Specs - BLM 800158
Software Test Results - BLM 800158

DOCUMENT: BLM C-80015B

CONSOLIDATED SOFTWARE TEST DOCUMENT (C-STD)

PURPOSE: The Consolidated Software Test Document (C-STD) is a single document encompassing the test planning, test cases and procedures, and test results for CSCI, CSCI integration, and software system testing, as applicable.

CONTENTS: It contains, in summary form, the contents of the Software Test Plan (STP), Software Test Description(s) (STDs), and Software Test Report(s) (STRs) for a project.

A C-STD is written as an alternative to the individual testing documents cited above. It is best suited to a project on which a single test document is most effective.

Paragraphs that have been tailored out of the DID shall result in the corresponding paragraph number and title in the document, followed by "This paragraph has been tailored out."

Document Structure:

1. Scope
 - 1.1 Identification
 - 1.2 System overview
 - 1.3 Document overview
2. Referenced documents
3. Software test planning
 - 3.1 Software test environment
 - 3.1.x (Name of test site(s))
 - 3.2 Test identification
 - 3.2.1 General information
 - 3.2.2 Planned tests
 - 3.2.2.x (Item(s) to be tested)
 - 3.2.2.x.y (Test name and identifier)
 - 3.3 Test schedules
4. Software test descriptions
 - 4.x (Item(s) to be tested)
 - 4.x.1 Test preparations
 - 4.x.1.y (Test name and identifier)
 - 4.x.2 Test descriptions
 - 4.x.2.y (Test name and identifier)
 - 4.x.2.y.z (Test case name and project-unique Identifier)
5. Software test report
 - 5.x (Item(s) tested)
 - 5.x.1 Test overview
 - 5.x.1.y (Test name and identifier)
 - 5.x.2 Detailed test results

5.x.2.y (Test name and identifier)

5.x.3

Evaluation and recommendations

6. Notes

7. Appendixes

U.S. v. (First name and last name)
Location and date of birth

U.S. v.
Name
Location

1. Scope. This section shall be divided into the following paragraphs.
 - 1.1 Identification. This paragraph shall contain a full identification of the system and the CSCIs to which this document applies, including, as applicable, identification number(s), title(s), abbreviation(s), version number(s), and release number(s).
 - 1.2 System overview. This paragraph shall briefly state the purpose of the system and the software to which this document applies. It shall describe the general nature of the system and software; summarize the history of system development, operation, and maintenance; identify the project sponsor, user, developer, and support agencies; identify current and planned operating sites; and list other relevant documents.
 - 1.3 Document overview. This paragraph shall summarize the purpose and contents of this document.
2. Referenced documents. This section shall list by document number and title all documents referenced in this document. This section shall also identify the source for all documents not available through normal Government stocking activities.
3. Software test planning. This section shall be divided into the following paragraphs to describe the contractor's plans for conducting CSCI, CSCI integration, and software system testing.
 - 3.1 Software test environment. This paragraph shall be divided into subparagraphs as needed to describe the software test environment at each intended test site. Reference may be made to the software engineering environment described in the software development plan for those resources that are used in both environments.
 - 3.1.x (Name of test site(s)). This paragraph shall identify one or more test sites to be used for the testing, and shall describe the software test environment at the site(s). The description of each test environment shall include the following:
 - a. Name/identifier and version of software items (e.g., operating systems, compilers, communications software, databases, test drivers, preprocessors, other special test software), including the purpose of each, any security and privacy considerations, and which are to be provided by the site.
 - b. Name/model/serial number and version of hardware and firmware items (e.g., computer hardware, interfacing equipment, communications equipment, test message generators, test timing devices, etc.), including the purpose of each, any security and privacy considerations, and which are to be provided by the site.

3.000. This section shall be divided into the following paragraphs:

1.01. Identification. This paragraph shall contain a full identification of the system and the CSIS to which this document applies, including, as applicable, identification number(s), title(s), version number(s), and release number(s).

1.02. System Overview. This paragraph shall briefly state the purpose of the system and the context in which it is to be used. It shall describe the general nature of the system and its function, the history of system development, operation, and maintenance; identify the primary equipment used; identify the support equipment; identify the system and planned operating sites; and list other relevant documents.

1.03. Document Overview. This paragraph shall summarize the purpose and contents of this document.

2.00. Related Documents. This section shall list by document number and title all documents referenced in this document. This section shall also identify the sources for all documents not available through normal government stockpiling activities.

3.00. Software Test Plan. This section shall be divided into the following paragraphs to describe the developer's plan for conducting CSIS, CSIS inspection, and software system testing:

3.01. Software Test Environment. This paragraph shall be divided into paragraphs as needed to describe the software test environment to which the test will be applied. Reference may be made to the software engineering environment described in the system development plan for those portions that are used in both environments.

3.02. Test of Test Results. This paragraph shall identify one or more test sites to be used for the testing and shall describe the software test environment at the site(s). The description of each test environment shall include the following:

a. Identification and version of software items to be tested; hardware, software, and communication equipment; test drivers, test procedures, test equipment, including the purpose of each, any security and safety considerations, and which are to be provided by the site.

b. Identification of test and version of hardware and software items to be tested; hardware, software, and communication equipment; test drivers, test procedures, test equipment, including the purpose of each, any security and safety considerations, and which are to be provided by the site.

- c. Other materials needed for the testing (e.g., manuals, listings, the software to be tested, data to be used in the tests, sample outputs, test worksheets, etc.), including the purpose of each, any security and privacy considerations, and which are to be provided by the site.
- d. The proprietary nature and Government rights associated with each item of the software test environment.
- e. Plans for installation, testing, and control of the software test environment.
- f. The organizations that will participate in the testing.
- g. The number and skill types of personnel required during the test period, and the dates and time they will be needed.
- h. Plans for any orientation and training to be given before and during the testing.
- i. The tests to be performed at the site(s), indicated by references to paragraph 3.2.

3.2 Test identification.

3.2.1 General information. This paragraph shall provide the following general information about the testing to be performed:

- a. Levels of tests to be performed (e.g. CSCI, CSCI integration, system)
- b. Types or classes of tests to be performed (e.g., stress tests, timing tests, erroneous input tests, maximum capacity tests)
- c. Any test requirements that apply to all, or a group of, tests (e.g., "Tests of type x shall use live data")
- d. Extent of testing to be performed (e.g., specified sampling of possible inputs) and rationale for the extent selected
- e. Planned sequence or progression of tests
- f. The data recording, reduction, and analysis procedures to be used during and after the tests

3.2.2 Planned tests.

3.2.2.x (Item(s) to be tested). This paragraph shall identify a CSCI, group of CSCIs, subsystem, system, or other entity by name and project-unique identifier, and shall be divided into the following subparagraphs to provide an overview of the tests planned for that item. (Note: "tests" are collections of test

cases. There is no intent to describe each test case in this paragraph.)

3.2.2.x.y (Test name and identifier). This paragraph shall identify a test by name and project-unique identifier, and shall be divided into subparagraphs as needed to specify:

- a. Test objective
- b. Test level (using the test levels defined above)
- c. Test class (using the test classes defined above)
- d. Qualification method(s) specified in the associated requirements specification(s)
- e. Cross reference to the software requirements addressed by this test
- f. Any special test requirements
- g. Type of data to be recorded
- h. Type of data recording/reduction/analysis to be employed
- i. Assumptions and constraints
- j. Any security and privacy considerations

3.3 Test schedules. This paragraph shall contain or reference the schedules for conducting the tests identified in this plan. The schedules shall include:

- a. Time frame for testing at each test site
- b. Test schedule for each test site, including pretest activities, preparation of test inputs and databases, any orientation or training associated with the testing, the testing itself, and any period for review/approval of test results

4. Software test descriptions. This section shall be divided into the following paragraphs to describe the test cases and test procedures to be used for CSCI, CSCI integration, and software system testing.

4.x (Item(s) to be tested). This paragraph shall identify an item to be tested and shall be divided into the following subparagraphs to describe the tests for that item.

4.x.1 Test preparations. This paragraph shall be divided into the following subparagraphs to describe test preparations. Security and privacy considerations shall be included as applicable.

4.x.1.y (Test name and identifier). This paragraph shall identify a test by name and identifier, and shall be divided into subparagraphs as needed to provide the following information:

- a. Test schedule, if updated or more detailed than that given in paragraph 3.3
- b. Pre-test procedures for hardware preparations
- c. Pre-test procedures for software and data preparations
- d. Other pre-test preparations

... There is no intent to describe each case in this paragraph.

1.2.2.3. These items and identifiers. This paragraph shall identify a case by name and subject matter identifier, and shall be divided into subparagraphs as needed to identify:

- a. Test objectives
- b. Test level (using the test level defined above)
- c. Test class (using the test classes defined above)
- d. Qualification methods (specified in the test plan)
- e. Test results (specified in the test plan)
- f. Test results in the software requirements document by this test
- g. Test results (test requirements)
- h. Type of data to be recorded
- i. Type of data recording (test requirements to be specified)
- j. Requirements and constraints
- k. Test results and priority considerations

Test objectives. This paragraph shall identify the test objectives for each test case identified in this plan. The objectives shall include:

- a. Test results (test objectives and test plan)
- b. Test objectives for each test case, including program, hardware, preparation of test input and hardware, any combination of hardware associated with the testing, the testing itself, and any other test requirements of test results

Test results. This paragraph shall be divided into the following paragraphs to describe the test results and test objectives to be used for each test case identified, and objectives specified.

Test results. This paragraph shall identify as follows the test results and shall be divided into the following paragraphs to describe the test results and test plan.

Test objectives. This paragraph shall be divided into the following paragraphs to describe the test objectives, hardware, and priority considerations as identified.

Test results and identifiers. This paragraph shall identify a test case by name and identifier, and shall be divided into subparagraphs as needed to provide the following information:

- a. Test objectives, if specified or otherwise defined in the test plan
- b. Test objectives for hardware preparation
- c. Test objectives for software and data preparation
- d. Other test objectives

- 4.x.2 Test descriptions. This paragraph shall be divided into the following subparagraphs to provide test descriptions for the item(s) under test. Security and privacy considerations shall be included as applicable.
- 4.x.2.y (Test name and identifier). This paragraph shall identify a test by name and project-unique identifier and shall be divided into the following subparagraphs.
- 4.x.2.y.z (Test case name and project-unique identifier). This subparagraph shall identify a test case by name and project-unique identifier and shall provide the following information for the test case:
- a. Purpose/traceability: cross-reference to the software requirements addressed by the test case
 - b. Means of control to be used: manual, semi-automatic, or automatic insertion of inputs and control of test sequence
 - c. Prerequisite conditions that must be established: hardware/software initialization or other initialization
 - d. Test inputs: description, source, real vs simulated, timing/sequence, means of control
 - e. Expected results, both intermediate and final, as applicable
 - f. Criteria for evaluating the results: acceptable limits for tolerances, sample sizes, durations, number of breaks, severity of problems, status indicators
 - g. Test procedure: numbered steps to be followed in initiating, carrying out, and analyzing the results of the test case, including, as applicable, alternative actions, expected results, and evaluation criteria for each step
 - h. Any assumptions or constraints applicable to the test case
5. Software test report. This section shall be divided into the following paragraphs to describe the results of CSCI, CSCI integration, and software system testing.
- 5.x (Item(s) tested). This paragraph shall identify an item under test and shall be divided into the following subparagraphs to describe the results of the tests for that item.
- 5.x.1 Test overview.
- 5.x.1.y (Test name and identifier). This paragraph shall identify a test by name and project-unique identifier and shall be divided into subparagraphs as needed to provide the following information:
- a. A summary of test results, including the completion status of the test (for example, "all results as expected,"

"problems encountered," "deviations required") and, when the completion status is not "as expected," a summary of the problems or deviations that occurred and reference Section to 5.x.2 for details

- b. Reference to a figure, appendix, or other presentation of a chronological record of test events, including dates, times, locations, hardware and software configurations used, activities, and test performers and witnesses, as applicable

5.x.2 Detailed test results. This paragraph shall be divided into the following subparagraphs to describe the detailed results of each test.

5.x.2.y (Test name and identifier). This paragraph shall identify a test by name and project-unique identifier and shall be divided into subparagraphs as needed to provide the following information:

- a. The completion status of each test case associated with this test (e.g., "all results as expected," "problems encountered," "deviations required")
- b. A description of each problem encountered, including the test case and test procedure step where it was encountered and reference to the associated problem report(s)
- c. A description of each deviation from the documented test cases/test procedures, including test case and test procedure step where the deviation occurred, nature of the deviation, rationale, and an assessment of its impact on the validity of the test case

5.x.3 Evaluation and recommendations. This paragraph shall be divided\ into the subparagraphs as needed to provide:

- a. An overall assessment of each item under test, summary of remaining deficiencies or limitations, impact if the deficiencies/limitations are not corrected, and impact to correct them
- b. An assessment of the manner in which the test environment may be different from the operational environment and the effect of this difference on the capabilities tested
- c. Any recommended improvements in the design, operation, or testing of the item(s) under test (optional)

6. Notes. This section shall contain any general information that aids in understanding this document (e.g., background information, glossary). This section shall include an alphabetical listing of all acronyms, abbreviations, and their meanings as used in this document and a list of any terms and definitions needed to understand this document.

7.

Appendixes. Appendixes may be used to provide information published separately for convenience in document maintenance (e.g., charts, classified data). As applicable, each appendix shall be referenced in the main body of the document where the data would normally have been provided.

DOCUMENT: DLM 80170

SOFTWARE TEST REPORT

(STR)

Expenditures: Expenditures may be used to provide information
submitted separately for consideration in subsequent proceedings
in the matter, submitted under the appropriate, each expenditure
shall be referred to the title of the document which the
two would normally have been provided.

SOFTWARE TEST REPORT

(STR)

DOCUMENT: BLM 80017B

SOFTWARE TEST REPORT

(STR)

DOCUMENT: BLM 80017B

SOFTWARE TEST REPORT (STR)

PURPOSE: The Software Test Report (STR) is a record of the testing performed on a Computer Software Configuration Item (CSCI), an integrated group of CSCIs or CSCIs/HWCIs, a software system or segment, or other software-related item. An STR provides a permanent record of the testing and its results.

CONTENT: This Data Item Description (DID) contains the format and content preparation instructions.

This DID is an alternative to Consolidated Software Test Document and Completely Consolidated Software Development Record). Only one of these three DIDs should be applied to a given set of data. Paragraphs that have been tailored out of the DID shall result in the corresponding paragraph number and title in the document, followed by "This paragraph has been tailored out."

DOCUMENT STRUCTURE:

1. Scope
 - 1.1 Identification
 - 1.2 System overview
 - 1.3 Document overview
 - 1.4 Security and privacy
2. Referenced documents
3. Test overview
 - 3.x (Test name and project-unique identifier)
 - 3.x.1 (Test name) summary
 - 3.x.2 (Test name) test record
 - 4.x (Test name/identifier) test results
 - 4.x.1 Test case results
 - 4.x.2 Problems encountered
 - 4.x.2.y (Test case name/identifier)
 - 4.x.3 Deviations from test cases/procedures
 - 4.x.3.y (Test case name/identifier)
5. Evaluation and recommendations
 - 5.1 Evaluation
 - 5.2 Impact of test environment
 - 5.3 Recommended improvements
6. Notes
7. Appendixes

SOFTWARE TEST REPORT (SRT)

The Software Test Report (SRT) is a record of the testing performed on a Computer Software Configuration Item (CSCI) as indicated in the SRT. It is a record of the testing performed on a CSCI as indicated in the SRT. It is a record of the testing performed on a CSCI as indicated in the SRT.

The SRT is a record of the testing performed on a CSCI as indicated in the SRT. It is a record of the testing performed on a CSCI as indicated in the SRT. It is a record of the testing performed on a CSCI as indicated in the SRT.

This SRT is an abbreviated version of the SRT. It is a record of the testing performed on a CSCI as indicated in the SRT. It is a record of the testing performed on a CSCI as indicated in the SRT. It is a record of the testing performed on a CSCI as indicated in the SRT.

SOFTWARE TEST REPORT

1. Scope
 - 1.1 Identification
 - 1.2 System Overview
 - 1.3 Software Overview
 - 1.4 Security and Privacy
2. Test Overview
 - 2.1 Test Plan and Test Case Identification
 - 2.2 Test Case Summary
 - 2.3 Test Case Test Results
 - 2.4 Test Case Identification and Results
 - 2.5 Test Case Summary
 - 2.6 Test Case Summary
 - 2.7 Test Case Summary
 - 2.8 Test Case Summary
 - 2.9 Test Case Summary
 - 2.10 Test Case Summary
3. Test Results
 - 3.1 Test Results Summary
 - 3.2 Test Results Summary
 - 3.3 Test Results Summary
 - 3.4 Test Results Summary
 - 3.5 Test Results Summary
 - 3.6 Test Results Summary
 - 3.7 Test Results Summary
 - 3.8 Test Results Summary
 - 3.9 Test Results Summary
 - 3.10 Test Results Summary
4. Test Results
 - 4.1 Test Results Summary
 - 4.2 Test Results Summary
 - 4.3 Test Results Summary
 - 4.4 Test Results Summary
 - 4.5 Test Results Summary
 - 4.6 Test Results Summary
 - 4.7 Test Results Summary
 - 4.8 Test Results Summary
 - 4.9 Test Results Summary
 - 4.10 Test Results Summary
5. Test Results
 - 5.1 Test Results Summary
 - 5.2 Test Results Summary
 - 5.3 Test Results Summary
 - 5.4 Test Results Summary
 - 5.5 Test Results Summary
 - 5.6 Test Results Summary
 - 5.7 Test Results Summary
 - 5.8 Test Results Summary
 - 5.9 Test Results Summary
 - 5.10 Test Results Summary
6. Test Results
 - 6.1 Test Results Summary
 - 6.2 Test Results Summary
 - 6.3 Test Results Summary
 - 6.4 Test Results Summary
 - 6.5 Test Results Summary
 - 6.6 Test Results Summary
 - 6.7 Test Results Summary
 - 6.8 Test Results Summary
 - 6.9 Test Results Summary
 - 6.10 Test Results Summary
7. Test Results
 - 7.1 Test Results Summary
 - 7.2 Test Results Summary
 - 7.3 Test Results Summary
 - 7.4 Test Results Summary
 - 7.5 Test Results Summary
 - 7.6 Test Results Summary
 - 7.7 Test Results Summary
 - 7.8 Test Results Summary
 - 7.9 Test Results Summary
 - 7.10 Test Results Summary
8. Test Results
 - 8.1 Test Results Summary
 - 8.2 Test Results Summary
 - 8.3 Test Results Summary
 - 8.4 Test Results Summary
 - 8.5 Test Results Summary
 - 8.6 Test Results Summary
 - 8.7 Test Results Summary
 - 8.8 Test Results Summary
 - 8.9 Test Results Summary
 - 8.10 Test Results Summary
9. Test Results
 - 9.1 Test Results Summary
 - 9.2 Test Results Summary
 - 9.3 Test Results Summary
 - 9.4 Test Results Summary
 - 9.5 Test Results Summary
 - 9.6 Test Results Summary
 - 9.7 Test Results Summary
 - 9.8 Test Results Summary
 - 9.9 Test Results Summary
 - 9.10 Test Results Summary
10. Test Results
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 - 10.10 Test Results Summary

1. Scope. This section shall be divided into the following paragraphs.
 - 1.1 Identification. This paragraph shall contain a full identification of the system and the CSCIs to which this document applies, including, as applicable, identification number(s), title(s), abbreviation(s), version number(s), and release number(s).
 - 1.2 System overview. This paragraph shall briefly state the purpose of the system and the software to which this document applies. It shall describe the general nature of the system and software; summarize the history of system development, operation, and maintenance; identify the project sponsor, user, developer, and support agencies; identify current and planned operating sites; and list other relevant documents.
 - 1.3 Document overview. This paragraph shall summarize the purpose and contents of this document.
 - 1.4 Security and privacy. This paragraph shall describe any security and privacy considerations associated with the test analysis and the data being handled.
2. Referenced documents. This section shall list by document number and title all documents referenced in this report. This section shall also identify the source for all documents not available through normal Government stocking activities.
3. Test overview. This section shall be divided into the following paragraphs to summarize the results of each test covered by this report. Note: The word "test" means a related collection of test cases. There is no requirement to report on each test case in this section.
 - 3.x (Test name and project-unique identifier). This paragraph shall identify a test by name and number, and shall be divided into the following subparagraphs to provide an overview of the test results.
 - 3.x.1 (Test name) summary. This paragraph shall summarize the results of the test. The summary shall include the completion status of the test (for example, "all results as expected," "problems encountered," "deviations required." When the completion status is not "as expected," this paragraph shall summarize the problems or deviations that occurred and reference Section 4 for details.
 - 3.x.2 (Test name) test record. This paragraph shall present,

1. This section shall be divided into the following paragraphs:
- 1.1 Identification. This paragraph shall contain a full identification of the system and the data to which this document applies, including, as appropriate, identification numbers, titles, abbreviations, version numbers, and release numbers.
- 1.2 System description. This paragraph shall briefly state the purpose of the system and the software to which this document applies. It shall describe the general nature of the system and software, including the history of system development, operation, and maintenance; identify the system's objectives, user, developer, and support personnel; identify current and planned operating times; and list other relevant documents.
- 1.3 Document structure. This paragraph shall summarize the structure and contents of this document.
- 1.4 Security and privacy. This paragraph shall describe any security and privacy considerations associated with the test analysis and the data being handled.
2. Related documents. This section shall list by document number and title all documents referenced in this report. This section shall also identify the sources for all documents not available through normal government tracking activities.
3. Test activities. This section shall be divided into the following paragraphs to summarize the results of each test covered by this report. When the test report is a revised edition of a test plan, there is no requirement to repeat or omit test case details.
- 3.1 Test plan and report status/identification. This paragraph shall identify a test by name and number, and shall be divided into the following subparagraphs to provide an overview of the test results:
- 3.1.1 Test plan summary. This subparagraph shall summarize the test. The summary shall include the justification of the test, the test's purpose, all test cases, expected, and problem statements, and test results. When the justification status is not "as expected," this paragraph shall summarize the problem or deviation that occurred and reference Section 4 for details.
- 3.1.2 Test result test group. This paragraph shall present

possibly

in a figure or appendix, a chronological record of test events. This record, which may be in the form of a test log, shall include:

- a. The date(s), time(s) and location(s) of the test.
- b. The hardware and software configurations used for the test including, as applicable, part/model/serial number, manufacturer, revision level, and calibration date of all hardware, and version number and name for the software components used.
- c. The date and time of each test-related activity, the identity of the individual(s) who performed the activity, and the identities of witnesses, as applicable 4. Detailed test results. This section shall be divided into the following paragraphs to describe the detailed results for each test.

4.x (Test name/identifier) test results. This paragraph shall identify a test by name and project-unique identifier, and shall be divided into the following subparagraphs.

4.x.1 Test case results. This paragraph shall present, possibly in a table, the completion status of all test cases associated with this test. The completion status shall be, for example, "all results as expected," "problems encountered," "deviations required."

4.x.2 Problems encountered. This paragraph shall be divided into subparagraphs that identify each test case in which one or more problems occurred.

4.x.2.y (Test case name/identifier). This paragraph shall identify a test case in which one or more problems occurred, and shall provide:

- a. A brief description of the problems(s) that occurred.
- b. Identification of the test procedure step(s) in which they occurred.
- c. Reference(s) to the associated problem report(s).
- d. The number of times the procedure or step was repeated in attempting to correct the problem(s) and the outcome of each attempt.

e. Backup points or test steps where tests were resumed for retesting.

4.x.3 Deviations from test cases/procedures. This paragraph shall be divided into subparagraphs that identify each test case in which deviations from test case/test procedures occurred.

4.x.3.y (Test case name/identifier). This paragraph shall identify a test case in which one or more deviations occurred, and shall provide:

a. A description of the deviation(s) (for example, substitution of required equipment, changes to support software, procedural steps not followed, schedule deviations). (Red-lined test procedures may be used to show the deviations).

b. The rationale for the deviation(s).

c. An assessment of the deviations' impact on the validity of the test case.

5. Evaluation and recommendations. This section shall be divided into the following paragraphs.

5.1 Evaluation. This paragraph shall:

a. Provide an overall assessment of the software as demonstrated by the test results in this report.

b. Identify any remaining deficiencies, limitations, or constraints that were detected by the testing performed. Software problem/change reports may be used to provide deficiency information.

c. For each deficiency, limitation, or constraint, describe:

- 1) Its impact on software and system performance
- 2) The impact on software and system design to correct it
- 3) A recommended solution/approach for correcting it

5.2 Impact of test environment. This paragraph shall provide an assessment of the manner in which the test environment may be different from the operational environment and the effect of this difference on the capabilities tested.

- 5.3 Recommended improvements. This paragraph shall provide any recommended improvements in the design, operation, or testing of the item(s) under test. A discussion of each recommendation and its impact on the items may be provided. If no recommended improvements are provided, this paragraph shall state "None."
6. Notes. This section shall contain any general information that aids in understanding this document (e.g., background information, glossary). This section shall include an alphabetical listing of all acronyms, abbreviations, and their meanings as used in this document and a list of any terms and definitions needed to understand this document.
7. Appendixes. Appendixes may be used to provide information published separately for convenience in document maintenance (e.g., charts, classified data). As applicable, each appendix shall be referenced in the main body of the document where the data would normally have been provided.

2. This section shall contain any general information that aids in understanding this document, e.g., background information, glossary. This section shall include an alphabetical listing of all abbreviations, and their meanings as used in this document and a list of any terms and definitions needed to understand this document.

3. This section shall contain any general information that aids in understanding this document, e.g., background information, glossary. This section shall include an alphabetical listing of all abbreviations, and their meanings as used in this document and a list of any terms and definitions needed to understand this document.

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DOCUMENT: BLM 80019B

SOFTWARE USER MANUAL

(SUM)

DOCUMENT: RLM 800198
SOFTWARE USER MANUAL

(SUM)

DOCUMENT: BLM 80019B

SOFTWARE USER MANUAL (SUM)

PURPOSE: The Software User Manual (SUM) tells a hands-on software user how to install, initiate, use, and terminate the software in a single CSCI, a group of related CSCIs, or an overall software system.

A SUM is developed for software that is run by the user and has a user interface requiring on-line user input or interpretation of displayed output. The SUM is an alternative to the Software Input/Output Manual (SIOM), which is developed for software that runs in a computer center and is accessed via terminals or by submitting batch inputs and receiving batch reports.

CONTENTS: This Data Item Description (DID) contains the format and content preparation instructions.

This DID is an alternative to Consolidated Software User/Operator Manual) and Completely Consolidated Software Development Record). Only one of these three DIDs should be applied to a given set of data.

Paragraphs that have been tailored out of the DID shall result in the corresponding paragraph number and title in the document, followed by "This paragraph has been tailored out." For data delivered in an alternative form, this representation need occur only in the table of contents or equivalent.

DOCUMENT STRUCTURE:

1. Scope
 - 1.1 Identification
 - 1.2 System overview
 - 1.3 Document overview
 - 1.4 Security and privacy
2. Referenced documents
3. Software summary
 - 3.1 Overview
 - 3.1.1 Application summary
 - 3.1.2 Performance
 - 3.1.3 Controls
 - 3.2 Software environment
 - 3.2.1 Hardware required
 - 3.2.2 Software required
 - 3.3 Contingencies/alternate modes of operation
 - 3.4 Assistance and problem reporting
4. Access to the software
 - 4.1 First-time user of the software
 - 4.1.1 Equipment familiarization

SOFTWARE CASE MANUAL (SCM)

Example: The software user manual (UUM) is a document that describes how to install, use, and maintain the software in a single, easy-to-use format. It is an essential document for the user.

A UUM is developed for a software that is used by the user and has a user interface consisting of a series of screens or information of displayed output. The UUM is an alternative to the software user manual (UUM) which is developed for software that is used by a user. It is a document that describes the software and its operation.

Example: This document (UUM) describes the software and contains information about the software.

The UUM is an alternative to the software user manual (UUM) which is developed for software that is used by a user. It is a document that describes the software and its operation.

Example: This document (UUM) describes the software and contains information about the software. It is a document that describes the software and its operation.

SOFTWARE STRUCTURE

1. Software Structure
 - 1.1 Identification
 - 1.1.1 Software overview
 - 1.1.2 Software overview
 - 1.1.3 Software overview
 - 1.1.4 Software overview
 - 1.2 Software overview
 - 1.2.1 Software overview
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 - 1.9.1 Software overview
 - 1.9.2 Software overview
 - 1.9.3 Software overview
 - 1.9.4 Software overview
 - 1.10 Software overview
 - 1.10.1 Software overview
 - 1.10.2 Software overview
 - 1.10.3 Software overview
 - 1.10.4 Software overview

- 4.1.2 Access control
 - 4.1.3 Installation and setup
 - 4.2 Initiating a session
 - 4.3 Stopping and suspending work
- 5. Processing reference guide
 - 5.1 Capabilities
 - 5.2 Conventions
 - 5.3 Processing procedures
 - 5.3.x Variable title (Identify)
 - 5.4 Related processing
 - 5.5 Data backup
 - 5.6 Recovery from errors, malfunctions, and emergencies
 - 5.7 Messages
- 6. Notes
- 7. Appendixes

1.0	Introduction	1.0
2.0	General information	2.0
3.0	Objectives	3.0
4.0	Methodology	4.0
5.0	Results and discussion	5.0
6.0	Conclusions	6.0
7.0	References	7.0
8.0	Appendix	8.0
9.0	Bibliography	9.0
10.0	Index	10.0
11.0	Summary	11.0
12.0	Conclusion	12.0
13.0	References	13.0
14.0	Appendix	14.0
15.0	Bibliography	15.0
16.0	Index	16.0
17.0	Summary	17.0
18.0	Conclusion	18.0
19.0	References	19.0
20.0	Appendix	20.0
21.0	Bibliography	21.0
22.0	Index	22.0
23.0	Summary	23.0
24.0	Conclusion	24.0
25.0	References	25.0
26.0	Appendix	26.0
27.0	Bibliography	27.0
28.0	Index	28.0
29.0	Summary	29.0
30.0	Conclusion	30.0
31.0	References	31.0
32.0	Appendix	32.0
33.0	Bibliography	33.0
34.0	Index	34.0
35.0	Summary	35.0
36.0	Conclusion	36.0
37.0	References	37.0
38.0	Appendix	38.0
39.0	Bibliography	39.0
40.0	Index	40.0
41.0	Summary	41.0
42.0	Conclusion	42.0
43.0	References	43.0
44.0	Appendix	44.0
45.0	Bibliography	45.0
46.0	Index	46.0
47.0	Summary	47.0
48.0	Conclusion	48.0
49.0	References	49.0
50.0	Appendix	50.0
51.0	Bibliography	51.0
52.0	Index	52.0
53.0	Summary	53.0
54.0	Conclusion	54.0
55.0	References	55.0
56.0	Appendix	56.0
57.0	Bibliography	57.0
58.0	Index	58.0
59.0	Summary	59.0
60.0	Conclusion	60.0
61.0	References	61.0
62.0	Appendix	62.0
63.0	Bibliography	63.0
64.0	Index	64.0
65.0	Summary	65.0
66.0	Conclusion	66.0
67.0	References	67.0
68.0	Appendix	68.0
69.0	Bibliography	69.0
70.0	Index	70.0
71.0	Summary	71.0
72.0	Conclusion	72.0
73.0	References	73.0
74.0	Appendix	74.0
75.0	Bibliography	75.0
76.0	Index	76.0
77.0	Summary	77.0
78.0	Conclusion	78.0
79.0	References	79.0
80.0	Appendix	80.0
81.0	Bibliography	81.0
82.0	Index	82.0
83.0	Summary	83.0
84.0	Conclusion	84.0
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98.0	Appendix	98.0
99.0	Bibliography	99.0
100.0	Index	100.0

1. Scope. This paragraph shall be divided into the following paragraphs.
 - 1.1 Identification. This paragraph shall contain a full identification of the system and the CSCIs to which this document applies, including, as applicable, identification number(s), title(s), abbreviation(s), version number(s), and release number(s).
 - 1.2 System overview. This paragraph shall briefly state the purpose of the system and the software to which this document applies. It shall describe the general nature of the system and software; summarize the history of system development, operation, and maintenance; identify the project sponsor, user, developer, and support agencies; identify current and planned operating sites; and list other relevant documents.
 - 1.3 Document overview. This paragraph shall summarize the purpose and contents of this manual.
 - 1.4 Security and privacy. This paragraph shall contain an overview and discussion of the security and privacy considerations associated with the software. A warning shall be included regarding making unauthorized copies of data, documents, or software, if applicable.
2. Referenced documents. This section shall list by document number and title all documents referenced in this manual. This section shall also identify the source for all documents not available through normal Government stocking activities.
3. Software summary. This section shall provide a nontechnical description of the software described by this manual. Detailed technical information should be presented in other sections.
 - 3.1 Overview.
 - 3.1.1 Application summary. This paragraph shall describe the uses of the software in supporting the activities of the user. The description shall include major functions performed by the software such as preparation of output, maintenance of data, and display of information. This presentation, part of which shall be presented as a general system flowchart shall show, as applicable:
 - a. Logical parts of the software from the point of view of the user
 - b. Communication paths and techniques

Group. This paragraph shall be divided into the following paragraphs:

Identification. This paragraph shall contain a full identification of the system and the DDCs to which this document applies, including, as applicable, identification numbers, titles, abbreviations, version numbers, and release numbers.

System description. This paragraph shall briefly state the purpose of the system and the software to which this document applies. It shall describe the nature of the system and software, including the history of system development, operation, and maintenance; identify the present equipment, user, developer, and support personnel; identify current and planned operating sites; and list other relevant information.

Technical description. This paragraph shall summarize the purpose and content of this manual.

Contents and format. This paragraph shall contain an overview and discussion of the contents and format of this manual, including a comparison with other manuals. It shall be included in the manual, as appropriate, as follows:

Relationships. This section shall list by document number and title all documents referenced in this manual. This section shall also identify the source for all documents not available through normal Government stocking activities.

Other references. This section shall provide a cross-referenced list of the software described in this manual. Detailed technical information should be presented in other sections.

Appendix.

Appendix summary. This paragraph shall describe the

The software in supporting the activities of the user. The description shall include major functions performed by the software such as preparation of output, maintenance of data, and display of information. This information, part of which shall be presented in a general system flowchart shall show, as applicable:

1. Logical paths of the software from the point of

view of the

user

2. Communication paths and exchanges

- c. Interfaces to other systems or software
- d. The organizations that provide input to the software or that receive output from it

3.1.2 Performance. This paragraph shall describe the software performance characteristics that can be expected by the user. Characteristics such as capacity constraints and times needed to accomplish major functions shall be included.

3.1.3 Controls. This paragraph shall briefly describe the supervisory controls that can be implemented to manage the software.

3.2 Software environment.

3.2.1 Hardware required. This paragraph shall identify and briefly discuss the hardware that must be present for the software described in this manual to run. Options for the use of additional hardware shall also be identified.

3.2.2 Software required. This paragraph shall identify and briefly discuss any other software that is necessary to use the software described in this manual. This software may include the operating system, utilities, and other supporting systems.

3.3 Contingencies/alternate modes of operation. This paragraph shall explain the general nature of the differences expected in what the user will be able to do with the software at times of emergency and what the user will be able to do based on modes of operation that differ between peacetime, war, and conditions of alert.

3.4 Assistance and problem reporting. This paragraph shall identify points of contact and procedures to be followed to obtain assistance and report problems encountered in using the software.

4. Access to the software. This section shall contain detailed step-by-step procedures oriented to the first time/occasional user. Enough detail shall be presented so that the user can reliably access the software before learning the details of its functional capabilities.

4.1 First-time user of the software.

2.1.1. The organization shall provide input to the
management on the
technical aspects of the

2.1.2. This organization shall provide the
management with information that can be used by the
management to make decisions on the organization's
future. This information shall be provided in a
timely manner.

2.1.3. This organization shall provide the
management with information that can be used by the
management to make decisions on the organization's
future. This information shall be provided in a
timely manner.

2.1.4. This organization shall provide the
management with information that can be used by the
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timely manner.

2.1.5. This organization shall provide the
management with information that can be used by the
management to make decisions on the organization's
future. This information shall be provided in a
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management with information that can be used by the
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timely manner.

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management with information that can be used by the
management to make decisions on the organization's
future. This information shall be provided in a
timely manner.

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management with information that can be used by the
management to make decisions on the organization's
future. This information shall be provided in a
timely manner.

2.1.9. This organization shall provide the
management with information that can be used by the
management to make decisions on the organization's
future. This information shall be provided in a
timely manner.

4.1.1 Equipment familiarization. This paragraph shall describe the following as appropriate:

- a. Procedures for turning on power and making adjustments
- b. Dimensions and capabilities of the visual display screen
- c. Appearance of the cursor, how to identify an active cursor if more than one cursor can appear, how to position a cursor, and how to use a cursor
- d. Keyboard layout and what is accomplished by different types of keys and pointing devices
- e. Procedures for turning power off if special sequencing of operations is needed

4.1.2 Access control. This paragraph shall present an overview of the access and security features of the software that are visible to the user. The following items shall be included, as applicable:

- a. How and from whom to obtain a password
- b. How to add, delete, or change passwords under user control
- c. Security and privacy considerations pertaining to the storage and marking of output reports and other media that the user will generate

4.1.3 Installation and setup. This paragraph shall describe any special procedures that the user must perform in order to be identified or authorized to access or install software on the equipment, or to enter parameters for software operation.

4.2 Initiating a session. This paragraph shall provide step-by-step procedures for beginning work, including any options available. A checklist for problem determination shall be included in case difficulties are encountered.

4.3 Stopping and suspending work. This paragraph shall describe how the user can cease or interrupt use of the software and how to determine whether normal termination or cessation has occurred.

5. Processing reference guide. This section shall provide the user with technical information on processing procedures. If procedures are complicated or extensive, additional Sections 6, 7,... may be added in the same paragraph structure as this section. The organization of the document will depend on the

4.1.1. This paragraph shall describe the following as appropriate:

a. Procedures for turning on power and setting adjustment.

b. Dimensions and position of the visual display screen.

c. Dimensions of the control, the control and other parts.

d. It shall also state the nature and position of the control and how it is used.

e. Diagrams showing what is accomplished by different types of keys and pointing devices.

f. Procedures for turning power off if appropriate.

g. Operation is needed.

4.1.2. Operation Manual. This paragraph shall describe the operation and security features of the system. It shall include the following items as applicable:

a. How and when to operate a program.

b. How to set, adjust or change parameters under test.

c. Security and program considerations.

d. Storage and handling of input, output and other data that the user will generate.

4.1.3. Installation and wiring. This paragraph shall describe special procedures that the user must follow in order to be identified as authorized or denied access to the system. It shall also describe the physical installation of the system.

4.2. Installation and wiring. This paragraph shall provide step-by-step procedures for installing the system. It shall include the following items as applicable:

a. Dimensions of the system.

b. Dimensions of the control.

c. Dimensions of the control.

d. Dimensions of the control.

e. Dimensions of the control.

f. Dimensions of the control.

4.3. Operation and maintenance. This paragraph shall describe how the user can obtain the information and how to perform the maintenance and repair of the system.

4.4. Training and maintenance. This paragraph shall describe the training and maintenance of the system.

4.5. Maintenance and repair. This paragraph shall describe the maintenance and repair of the system.

4.6. Troubleshooting. This paragraph shall describe the troubleshooting of the system.

4.7. Appendix. This paragraph shall describe the appendix of the system.

4.8. Glossary. This paragraph shall describe the glossary of the system.

4.9. Index. This paragraph shall describe the index of the system.

4.10. Bibliography. This paragraph shall describe the bibliography of the system.

4.11. Other. This paragraph shall describe other items of the system.

characteristics of the software being documented. For example, if the tasks of users vary depending upon the organization echelon in which they work, Section 5 might be oriented to headquarters functions and Section 6 to remote site functions. For other software, it may be more appropriate to have Section 5 be a guide to menus used in the system, Section 6 be a guide to command language used in the system, and Section 7 be a guide to functions. Detailed procedures are intended to be presented in subparagraphs of paragraph 5.3. Depending on the design of the software, the subparagraphs might be organized on a function-by-function, menu-by-menu, or other basis. For a transaction-oriented system the organization might be on a screen-by-screen basis.

- 5.1 Capabilities. This paragraph shall briefly describe the interrelationships of the transactions, menus, functions, or other processes in order to provide an overview of the use of the software.
- 5.2 Conventions. This paragraph shall describe any conventions such as the use of colors in displays, the use of audible alarms, the use of abbreviated vocabulary, and the use of rules for assigning names or codes.
- 5.3 Processing procedures. This paragraph shall explain the organization of subsequent paragraphs, e.g., by function, by menu, by screen. Any necessary order in which procedures must be accomplished shall be described.
- 5.3.x Variable title (Identify). The title of this paragraph shall identify the function, menu, transaction, or other process being described. This paragraph shall describe and give options and examples, as applicable, of menus, data entry forms, user inputs, inputs from other software or hardware that may affect the software's interface with the user, outputs, diagnostic or error messages or alarms, and help facilities that can provide on-line descriptive or tutorial information. The format for presenting this information can be adapted to the particular characteristics of the software, but a consistent style of presentation shall be used, i.e., the descriptions of menus shall be consistent, the descriptions of transactions shall be consistent among themselves.
- 5.4 Related processing. This paragraph shall identify and describe any related batch, offline, or background processing performed by the software that is not invoked directly by the user and is not described in

paragraph 5.3. Any user responsibilities to support this processing shall be specified.

- 5.5 Data backup. This paragraph shall describe procedures for creating and retaining backup data that can be used to replace primary copies of data in event of errors, defects, malfunctions, or accidents.
- 5.6 Recovery from errors, malfunctions, and emergencies. This paragraph shall present detailed procedures for restart or recovery from errors or malfunctions occurring during processing and for ensuring continuity of operations in the event of emergencies.
- 5.7 Messages. This paragraph shall list, or refer to an appendix that lists, all error messages, diagnostic messages, and information messages that can occur while accomplishing any of the user's functions. The meaning of each message and the action that should be taken after each such message shall be identified and described.
6. Notes. This section shall contain any general information that aids in understanding this document (e.g., background information, glossary). This section shall include an alphabetical listing of all acronyms, abbreviations, and their meanings as used in this document and a list of terms and definitions needed to understand this document. If section 5 has been expanded into section(s) 6,...n, this section shall be numbered as the next section following section n.
7. Appendixes. Appendixes may be used to provide information published separately for convenience in document maintenance (e.g., charts, classified data). As applicable, each appendix shall be referenced in the main body of the document where the data would normally have been provided.

Paragraph 5.1. Any user responsibilities in a program shall be specified.

5.2 Data backup. This paragraph shall describe procedures for testing and using backup data and the user's responsibility to ensure that data is stored in a secure, reliable, and accessible manner.

5.3 Recovery from errors. This paragraph shall describe procedures for recovery from errors or malfunctions, including the user's responsibility to ensure that data is stored in a secure, reliable, and accessible manner.

5.4 Inspection. This paragraph shall describe procedures for inspecting the program, including the user's responsibility to ensure that data is stored in a secure, reliable, and accessible manner.

5.5 Maintenance. This paragraph shall describe procedures for maintaining the program, including the user's responsibility to ensure that data is stored in a secure, reliable, and accessible manner.

5.6 Documentation. This paragraph shall describe procedures for documenting the program, including the user's responsibility to ensure that data is stored in a secure, reliable, and accessible manner.

DOCUMENT: BLM 80031B

SOFTWARE INSTALLATION PLAN

(SIP)

PURPOSE: The purpose of this document is to provide a detailed description of the software installation process for the BLM 80031B system. This document is intended to be used as a reference for the installation of the software on a new system or to update an existing system.

SCOPE: This document describes the installation of the BLM 80031B software on a new system. It includes the following information:

- 1.1 System Requirements
- 1.2 Installation Prerequisites
- 1.3 Installation Steps
- 1.4 Verification Steps
- 1.5 Troubleshooting

DEFINITIONS: The following definitions are used throughout this document:

- 1.1 System Requirements: The minimum hardware and software requirements for the BLM 80031B system.
- 1.2 Installation Prerequisites: The conditions that must be met before the BLM 80031B software can be installed.
- 1.3 Installation Steps: The steps that must be followed to install the BLM 80031B software.
- 1.4 Verification Steps: The steps that must be followed to verify that the BLM 80031B software is installed correctly.
- 1.5 Troubleshooting: The steps that must be followed to troubleshoot any problems that may occur during the installation process.

1.0 Introduction

- 1.1 System Requirements
- 1.2 Installation Prerequisites
- 1.3 Installation Steps
- 1.4 Verification Steps
- 1.5 Troubleshooting

2.0 Installation Overview

- 2.1 Introduction
- 2.2 Objectives
- 2.3 Scope
- 2.4 Roles and Responsibilities
- 2.5 Tools and Materials
- 2.6 Personnel Requirements
- 2.7 Environmental Requirements

DOCUMENT: IBM 8000

SOFTWARE INSTALLATION PLAN

(SIP)

The purpose of this document is to provide a detailed description of the software installation process for the IBM 8000 system. This document is intended for use by the system administrator and the software developer.

The software installation process is described in detail in the following sections:

1. System Requirements
2. Software Requirements
3. Installation Procedures
4. Testing Procedures
5. Maintenance Procedures

SOFTWARE INSTALLATION PLAN (SIP)

PURPOSE: The Software Installation Plan (SIP) is a plan for installing a new or modified software system at user sites, including preparations, user training, and conversion from existing systems.

A SIP is developed when installation of a new or modified system, consisting of software alone or software and associated computer equipment, will be sufficiently complex to require a documented plan. For software and computer resources embedded in a larger system, a fielding or deployment plan for the larger system may make a separate Software Installation Plan unnecessary.

CONTENTS: It contains specific information required for each specific site for both software, hardware, and preparation instructions.

Paragraphs that have been tailored out of the DID shall result in the corresponding paragraph number and title in the document, followed by "This paragraph has been tailored out."

Content requirements. Content requirements begin on the following page. The numbers shown designate the paragraph numbers to be used in the document. Each such number is understood to have the prefix "10.2" within this DID. For example, the paragraph numbered 1.1 is understood to be paragraph 10.2.1.1 within this DID.

Document Structure:

1. Scope
 - 1.1 Identification
 - 1.2 System
 - 1.3 Document overview
2. Referenced documents
3. Installation overview
 - 3.1 Description
 - 3.2 Contact point
 - 3.3 Support materials
 - 3.4 Training
 - 3.5 Tasks
 - 3.6 Personnel orientation
 - 3.7 Personnel requirements

3.8 Security and privacy

4. Site information-computer operations

4.x (Site name)

- 4.x.1 Schedule
- 4.x.2 Software inventory
- 4.x.3 Facilities
- 4.x.4 Installation team
- 4.x.5 Detailed procedures
- 4.x.6 Data update procedures

5. Site information - users

5.x (Site name)

- 5.x.1 Schedule
- 5.x.2 Detailed procedures
- 5.x.3 Data update procedures

6. Notes

7. Appendixes

1. Scope. This section shall be divided into the following paragraphs.
 - 1.1 Identification. This paragraph shall contain a full identification of the system and the CSCIs to which this document applies, including, as applicable, identification number(s), title(s), abbreviation(s), version number(s), and release number(s).
 - 1.2 System overview. This paragraph shall briefly state the purpose of the system and the software to which this document applies. It shall describe the general nature of the system and software; summarize the history of system development, operation, and maintenance; identify the project sponsor, user, developer, and support agencies; identify current and planned operating sites; and list other relevant documents.
 - 1.3 Document overview. This paragraph shall summarize the purpose and contents of this plan.
2. Referenced documents. This section shall list by document number and title all documents referenced in this plan. This section shall also identify the source for all documents not available through normal Government stocking activities.
3. Installation overview. This section shall be divided into the following paragraphs to provide an overview of the installation process.
 - 3.1 Description. This paragraph shall provide a general description of the installation process to provide a frame of reference for the remainder of the document. A list of sites for system installation, the schedule dates, and the method of installation shall be included.
 - 3.2 Contact point. This paragraph shall provide the organizational name, office symbol/code, and telephone number of a contact for questions relating to this installation.
 - 3.3 Support materials. This paragraph shall list the type, source, and quantity of support materials required for the installation. Included shall be items such as magnetic tapes, disk packs, computer printer paper, and special forms.
 - 3.4 Training. This paragraph shall describe the type and amount of special training required, if any.

3.5

Tasks. This paragraph shall list or describe in general terms each task required for the system installation. Each task shall be identified with the organization that will accomplish the task, usually either the user, computer operations, or the

developer. This task list or description shall include such items to be accomplished as:

- a. Providing overall planning, coordination, and preparation for installation
- b. Ensuring that all manuals applicable to the installation are available when needed
- c. Providing technical assistance
- d. Establishing criteria, supervising, and conducting training activities associated with the installation
- e. Scheduling processing required for the installation
- f. Providing comprehensive support for the installation
- g. Ensuring that all prerequisites have been fulfilled prior to the installation date
- h. Providing personnel for the installation team
- i. Arranging lodging, transportation, and office facilities for the installation team
- j. Providing instructor/student personnel for training before and during the installation
- k. Providing computer support
- l. Providing priority scheduling to ensure adequate turnaround

3.6

Personnel orientation. This paragraph shall identify those efforts such as briefings and seminars intended to orient personnel to the new system.

3.7

Personnel requirements. This paragraph shall describe the number, time, and skill level of the personnel required during the installation period, including the need for multishift operation, clerical support, etc.

3.8

Security and privacy. This paragraph shall contain an overview of the security and privacy considerations associated with the system.

4.

Site information - computer operations. This section applies if the system will be installed in computer center(s) for users to access via terminals or using

batch inputs/ outputs. If this type of installation does not apply, this section shall contain the words "Not applicable."

- 4.x (Site name). This paragraph shall identify a site or set of sites and shall be divided into the following subparagraphs to discuss those sites. Multiple sites may be discussed together when the information for those sites is generally the same.
- 4.x.1 Schedule. This paragraph shall present a schedule of activities to be accomplished during installation. It shall depict the required tasks in chronological order with beginning and ending dates of each task with supporting narrative as necessary.
- 4.x.2 Software inventory. This paragraph shall provide an inventory of the software required to support the installation. The software shall be identified by name, identification code or acronym, and security classification. This paragraph shall indicate whether the software is expected to be on site or will be delivered for the installation and shall identify any software to be used only to facilitate the installation process.
- 4.x.3 Facilities. This paragraph shall detail the physical facilities and accommodations required during the installation period. This description shall include the following, as applicable:
- a. Classroom, work space, and training aids needed, specifying hours per day, number of days, and shifts
 - b. Hardware that must be operational and available
 - c. The availability of transportation and lodging for the installation team
- 4.x.4 Installation team. When an installation team is required, this paragraph shall describe its composition. Each team member's tasks shall be defined.
- 4.x.5 Detailed procedures. This paragraph shall be divided into subparagraphs to present the step-by-step procedures required to accomplish the installation, including conversion. References may be made to other documents, such as operator manuals. The procedures shall

include the following, as applicable:

- a. Control inputs
- b. Operating instructions
- c. Communications
- d. Database/data bank
- e. Output reports
- f. Special handling
- g. Diagnostic messages
- h. Procedures for restart/recovery and continuity of operations in emergencies

4.x.6 Data update procedures. This paragraph shall be divided into subparagraphs to present the data update procedures to be followed during the installation period. When the data update procedures are the same as the normal updating or processing procedures, reference may be made to other documents, such as operator manuals. The procedures shall include the following, as applicable:

- a. Control inputs
- b. Operating instructions
- c. Database/data bank
- d. Output reports
- e. Special handling
- f. Diagnostic messages
- g. Procedures for restart/recovery and continuity of operations in emergencies

5. Site information - users. This section shall provide users with the information necessary to accomplish an orderly installation. When more than one type of user is involved, a separate section (Sections 6 through n) may be written for each user and the section titles modified to reflect each user.

5.x (Site name). This paragraph shall identify a site or set of sites and shall be divided into the following subparagraphs to discuss those sites. Multiple sites may be discussed together when the information for those sites is generally the same.

5.x.1 Schedule. This paragraph shall present a schedule of activities to be accomplished by the user during installation. It shall depict the required tasks in chronological order, including beginning and ending dates for each task, with supporting narrative as necessary.

5.x.2 Detailed procedures. This paragraph shall be divided

for a fixed. For fixed, it was used to provide
a location, and it was used for convenience in
a current maintenance of a data (classified data).
is applicable to the data shall be referenced in the
main body of the data, where the data is normally
classified. This procedure will be followed

into subparagraphs to present the step-by-step procedures required to accomplish the installation, including conversion. Reference may be made to other documents, such as user manuals. The procedures shall include the following, as applicable:

- a. Initiation procedures
- b. Input formats
- c. Output formats
- d. Utilization of outputs
- e. Procedures for recovery, error correction, and continuity of operations in emergencies

5.x.3 Data update procedures. This paragraph shall be divided into subparagraphs to present the user's data update procedures to be followed during the installation period. When update procedures are the same as normal processing, reference may be made to other documents, such as user manuals, and to Section 4 of this document, as appropriate. The procedures shall include the following, as applicable:

- a. Initiation procedures
- b. Input formats
- c. Output formats
- d. Utilization of outputs
- e. Procedures for recovery, error correction, and continuity of operations in emergencies

6. Notes. This section shall contain any general information that aids in understanding this document (e.g., background information, glossary). This section shall include an alphabetical listing of all acronyms, abbreviations, and their meanings as used in this document and a list of terms and definitions needed to understand this document. If section 5 has

been expanded into section(s) 6,...n, this section shall be numbered as the next section following section n.

7. Appendixes. Appendixes may be used to provide information published separately for convenience in document maintenance (e.g., charts, classified data). As applicable, each appendix shall be referenced in the main body of the document where the data would normally have been provided.

subsequent to review the high-level processing
required to accomplish the installation, including
conversion. Reference may be made to other documents
such as user manuals. The procedures shall include
the following as applicable:

- a. Initial procedures
- b. Input format
- c. Output format
- d. Utilization of output
- e. Procedures for recovery, error correction, and
continuity of
operation in emergency

2.2.2 This update procedure. This procedure shall be
divided into
subsections to present the user's data update
procedures on the following basis: the input data
period. When update procedures are the same as normal
processing, reference may be made to other documents,
such as user manuals, and to Section 2.2.1.2.
The procedures shall
include the following, as applicable:

- a. Initial procedures
- b. Input format
- c. Output format
- d. Utilization of output
- e. Procedures for recovery, error correction, and
continuity of
operation in emergency

2.2.3 This section shall contain any general
information that aids in understanding this document.
2.2.4 Backward information. This section
shall include an alphabetical listing of all previous
editions, and their status as used in this
document and a list of terms and definitions needed to
understand this document. It shall be 2.2.5

been expanded into Section 2.2.5 of this section
shall be included as the new section following section
2.2.

2.2.5 Appendixes may be used to provide
information related separately for convenience in
document reference (e.g., charts, classified data),
as applicable, each appendix shall be referenced in the
main body of the document where the data would normally
have been provided.

